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VOWEL HARMONY AND CONSONANT SEQUENCES IN MAZAHUA[1] (OTOMÍ)

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1. The placement of intonation sometimes accompanies loss of vowel. This loss of vowel accompanies loss of vowel harmony and increases consonant clusters.

In her paper on Tone and Intonation in Mazahua (Otomí)[2] Eunice V. Pike describes the intonational characteristics and units of Mazahua. The present paper shows how the changing placement of the intonation which she describes affects vowel harmony and consonant sequences. These changes occur (1) when the optional addition of an enclitic syllable to a word[3] forces the intoneme to move from the stem formative vowel and to occur on the added syllable. Once the stem formative vowel of noncompounded stems is no longer supported by the presence of the intoneme the vowel is lost in normal speech. (It may, however, be retained in stilted speech.) (2) With the loss of the stem formative vowel under the weakening by removal of the intoneme, the vowel harmony disappears. The loss of the stem formative vowel accompanied by the loss of intonation brings together the consonants or consonant clusters of the stem formative and the consonant or consonant clusters of the enclitic. Consonant clusters occurring only as a result of vowel[4] loss will be termed SECONDARY; other clusters will be termed PRIMARY.

One may raise the question: Is stress responsible for these vowel losses and hence for the loss of vowel harmony and for the development of secondary consonant clusters? To this the reply must be negative, since the stress remains on the same syllable on which it occurred before.

A further question might be asked, however: Could the increased length of word, with any possibly accompanying change of rhythm, have caused the phenomena under

[1] Mazahua is one of the languages of the Otomí family. These data were gathered from the village of San Miguel Tenoxtitlán in the State of Mexico, in various field trips from 1940 to 1949. The most recent informant was Claudia Velasco, a girl of about 22 years of age.

In the early stages, the analysis of the segmental features was carried on in collaboration with Mildred Kiemele Muro.

This paper was written in its present form at the Summer Institute of Linguistics, University of Oklahoma; and was presented to the summer meeting of the Linguistic Society of America, Ann Arbor, Michigan, July 29, 1950.

[2] Eunice V. Pike, Tone and Intonation in Mazahua (Otomí), a paper presented to the Linguistic Society of America, the summer meeting, July 29, 1950. I am indebted to Miss Pike for the analysis of tone and intonation used in this paper and to her and other colleagues for helpful suggestions in the analysis and presentation of the material.

[3] We have chosen to consider the intonational unit described by Miss Pike as a phonological word, defined among other characteristics (for which see her paper) by intonemic placement, since each intoneme (or intoneme sequence) ends a word. Phonological words consist morphologically of an optional proclitic followed by a simple or compound stem which in turn is sometimes followed by an infix and/or an enclitic. A simple stem is composed of a root followed by a stem formative. A compound stem is composed of two simple stems in sequence or an abbreviation of these (see section **3.1.**). For tone rules in compounds see Eunice V. Pike, Tone and Intonation in Mazahua (Otomí).

[4] Further secondary clusters are formed by vowel loss in the middle of a compound stem (see section **3**).

discussion? Here again, the answer must be negative, since many of the forms without the loss of vowel are just as long or longer than other forms which because of intonation placement do suffer this loss.

In order to demonstrate these characteristics of Mazahua we turn now to specific statements concerning the patterns of vowel harmony and of consonant clusters. Then the changes induced by vowel loss as a result of intonational shift will be pointed out.

2. Vowel harmony[5] is not extensive in Mazahua but that which occurs is determined by the vowel of the root and affects the vowel of the stem formative or objective affix following it.

Roots are mono-syllabic. These roots may occur with various stem formative morphemes. Notice, ôsʔə[6] *to be on top*, ôtʔə *to go ahead*, ôbə *to lie down*, in which ô- is the root; the stem formatives, indicating direction, are the following: -sʔə *on top*, -tʔə *away from*, -bə *below*. Notice also that these same stem formatives occur with a different vowel depending on the quality of the vowel of the root syllable: hwísʔi *to cover*, kậsʔą *to be on top of* (*used of clothing*), têsʔe *to climb a tree*. In these examples the roots are hwí-, kậ-, and tê-; and the stem formative morpheme is -sʔV (V means predictable vowel). hyâbʌ *to fall down* (*used of leaves*), ngíbi *to sink*. The roots are hyâ- and ngí-. The stem formative is -bV. Many of these stem formatives have no clear meaning; nevertheless, the parallelisms are sufficient to establish, as alternate forms of the same morpheme, those having the same consonants but determined vowel.

2.1. The rules governing harmony of the root vowel plus the stem formative vowel are the following:

1. When the stem formative begins with h or ʔ the vowel of the stem formative is the same as the vowel of the root: khùʲʔų *sister* (*of a man*), màha *long*.

2. If the stem formative does not begin with h or ʔ the following groupings occur:

(a) The vowels i, e, ə, ʌ, į, ę, ą, and ǫ, in the root are followed by themselves in the stem formative: bîphi *smoke*, čéʔbe *wait*, thə́hmə *rope*, sátʔʌ *arrive there*, čhíhcį *wipe*, hę̀čʔę *to spin*, kậrą *there are*, thậʔtʔǫ *to tie*.

(b) Front vowel ɛ in the root is followed by i in the stem formative: béži *to lose*.

(c) Back vowels a, o, ɔ, and u in the root are followed by ə in the stem formative: phâdə *horse*, tʔôšə *nest*, tʔɔ̂šə *white*, ngùmə *house*.

(d) Back nasalized vowels ǫ, and ų́ in the root are followed by ǫ in the stem formative: tʔǫ́rǫ *firewood*, tų́ʔtʔǫ *to bind*.

These same rules apply to the objective affixes which are infixed to the stem formative.

2.2. The vowel of the root determines the vowel of the following syllable, as has been stated, if (1) that syllable is a stem formative, or if (2) that syllable includes an object infix.

It has also been stated that the addition of an enclitic to the stem formative of the noncompounded stem forces the intoneme

[5] For further brief references to vowel assimilation in Mazahua and in Otomí see Stanley Newman and Robert Weitlaner, Central Otomian II: Primitive Central Otomian Reconstructions, IJAL 16.73–78 (1950) and Henrietta Andrews, Phonemes and Morphophonemes of Temoayan Otomí, IJAL 15.312 (1949).

[6] There are 23 consonant phonemes, 15 vowel phonemes, and three tonemes. The consonants are: p, t, c, č, s, k, kʷ, ʔ, b, d, g, gʷ, š, z, ž, h, m, n, ñ, w, y, r, and l. The vowels are: i, į, e, ę, ɛ, a, ą, ɔ, o, ǫ, u, ų, ə, ǫ, and ʌ. The tonemes are: (́), low (̀), and falling (̂).

The phonemes b and d each have two allophones. One is the traditional voiced bilabial stop and voiced alveolar stop respectively. The other is a voiced bilabial implosive and voiced alveolar implosive respectively. The traditional voiced stops occur only after nasals.

The allophones of ž are: ž occurring between vowels and fluctuating with ʃ in word initial position; ǰ occurring after nasals.

The allophones of h are: h, M, N, Ñ, W, and Y. The voiceless nasals and semi-vowels occur each before its voiced counterpart.

to the vowel of the enclitic and the stem formative vowel is lost. The enclitic vowel which now carries the intonation is not affected by vowel harmony and hence is not predictable. Notice that the word rí-pá?t?ə *I heat something*, in the stilted form with the addition of an enclitic is rí-pá?t?əgə; but in the frequent but more emphatic form than the first it is rí-pá?t?k?ə with loss of the stem formative vowel. The final vowel of a dissyllabic word is not therefore, always predictable. Specifically, it is not predictable if the final vowel pertains to an enclitic syllable, before which the second vowel of the simple stem (the predictable vowel) was lost. Furthermore, it is not predictable in certain compounded stems. (See section **3.1**).

3. We look now at the affect on the consonants of the placement of the intoneme. The consonants and consonant clusters are limited in their distribution in proclitics, enclitics, stem formatives, and root syllables. Within the phonological word, large clusters may occur between the vowel carrying phonemic tone and the following vowel carrying an intoneme if (1) an object morpheme consisting of a consonant or consonant cluster has been inserted at that point, or if (2) an enclitic has been added to the simple stem with loss of the stem formative vowel because of change of intonation placement.

In compounded stems large secondary clusters may occur between the first and second root vowels. These clusters occur as the result of the loss of the stem formative vowel of the first element; and thus the consonants of the stem formative of the first element are brought together with the consonants of the root of the second element.

3.1. Compounds are formed from two complex stems each of which contains a root and a stem formative. If each of the stem formatives consists of ? or h plus a vowel, both stem formatives are lost[7] and thus the four syllables are reduced to two. The compounded stem which remains is therefore composed of the two roots. ǿñi *sore-head* (*an ill-natured person*), from ǿ?ə *to hurt* and ñí?i *head*.

If both members of a compound contain stem formatives of which neither contains ? or h, only the vowel of the stem formative of the first element is lost: phânt?ébi[8] *a kind of grass*, from phâdə *horse* and t?ébi *grass*.

If the first but not the second member of a compound contains ? or h, the first stem formative is lost but the second remains intact and the resulting compound is composed of three syllables: s?áphádə *fodder* (the ? in the first syllable is a nominalizer), from sá?a *to bite* and phâdə *horse*.

If the second but not the first member contains ? or h, the vowel of the stem formative of the first element is, with one exception,[9] lost. ȁšte[10] *eavesdropper*, from ȁs?ə *to listen* and té?e *person*.

3.2. Primary consonant clusters occurring root initial:

p, t, k, c, č, k^w, and s plus h:[11] phâdə *horse*, thèhe *cough*, khǿhnə *grinding stone*, chôgə *come in*!, čhême *much charcoal*, k^whà?a *rabbit*, shôgə *key*.

t, k, c, č, k^w, and s plus ?:[12] t?èhe *mountain*,

[7] However, if the stem formative of the second stem of a compound consists of h plus vowel, the stem formative may or may not be lost. phânt?e or phânt?èhe *deer*, from phâdə *horse* and t?èhe *mountain*. páréhe *hot water* and páre *hot water* (*a place name*) from pá?a *hot* and ndêhe *water*.

[8] In this compound n replaces d in the stem formative. See also section **4**.

[9] In the compounded stem mbǿ?t?ǿte *murderer*, from pǿ?t?ə *to kill* and té?e *person*, the vowel of the stem formative of the first element is not lost, presumably because t?t is not a permitted cluster.

[10] Notice that the stem formative -s?- is not lost in this illustration but is replaced by -š-. See footnote 14.

[11] The consonant phoneme sequence consonant plus h actualizes phonetically as aspirated consonant.

[12] The consonant phoneme sequence consonant plus ? actualizes phonetically as glottalized consonant.

k?ás?ə *to herd*, c?ít?i *child*, č?ás?ʌ *cripple*, k^{w}?êñe *get away!*, s?ɔ̀hnə *avocado*.

h plus m, n, ñ, w, and y: hmí?i *face*, hnɔ̂rə *light blue*, hñą́?ą *word*, hwàha *wing*, hyòya *orphan*.

? plus m, ñ, w, and y: ?mą̂rą *to discover*, ?ñíhi *road*, ?wàrə *maguey*, ?yò?o *dog*.

nasal plus b, d, g, z, ž, g^{w}, and ?y: mbéphi *laborer*, ndè?e *half*, ngûndo *hail*, nzînčo *nine*, nžɔ̂nə *oxen*, ng^{w}àrə *to finish*, n?yéme *laziness*.

Primary consonant clusters occurring in the stem formative:[13]

p, t, č, c, s, plus h: bèphi *work*, pòthə *black*, bêčhe *handleless basket*, šîchi *snow*, bêshi *turkey's wattles*.

h plus p, t, c, č, s, k, m, n, ñ: yèhpe *to repeat*, pòhtə *nearby*, píhci *to winnow*, mèhče *to last*, péhsi *to keep*, shóhkə *open*, čɔ̂hmə *market*, báhnə *to boil*, s?íhñi *to squeek*.

? plus b, m, y, p?, t?, č?, s?: ɔ́?bə *to dip*, tǫ́?mə *to sell corn*, šé?yi *to halve*, hǫ́?p?ǫ *to dig potatoes*, pá?t?ʌ *to mend*, hwé?č?e *to put out light*, pɔ́?s?ə *to put something on a fire*.

t, č, s plus ?: pât?ʌ *to put inside*, îč?i *to sting*, k?ôs?ə *to run over*.

m plus b, g, ph, kh: màmbą *to accuse*, phòmgə *to put outside*, šąmphą *to get ready*, hwąmkhą *to shake oneself*.

n plus d, z, š, t?, č?, s?: hàndą *to look*, šénze *to gather corn*, kǫ́nšǫ *to be twisted*, wânt?ə *to rinse*, khìnč?į *to dream*, pą́ns?ą *to wrap*.

Primary consonant clusters occurring when an object infix[14] has been inserted:

h plus p, k, tp, pk, tk, cp, čp, ck, čk, sk: ró-tǫ́hpǫ *I beat him*, ó-mbɔ́hkə *he sold to me*, ró-phɔ́htpə *I guarded it for him*, ó-hñɔ́hpkə *he removed it for me*, ín-čhɔ́htkə *you lighted it for me*, ó-tèhcpe *he finished his*, ró-péhčpi *I gathered for him*, ó-ndéhcke *he finished mine*, ó-mbéhčki *he gathered for me*, rí-hñǫ́hskǫ́ *add to it for me*

? plus p?, k?, t?p?, č?p?, p?k?, t?k?, c?k?, č?k?: ró-tɔ́?p?ʌ *I nailed it for him*, ró-tǫ́?k?ǫ *I beat you*, ró-ɔ́?t?p?ʌ *I made it for him*, ró-hè?ǩ?p?ǫ *I spun for him*, ó-ndɔ́?p?k?ʌ *he sewed for you*, rà-mbɔ́?t?k?ə *he will exchange with you*, ró-hé?c?k?i *I left it for you*, ró-hè?č?k?ę *I spun for you*.

m plus b, ph, bg, phkh, p?k?: ó-ndɔ̀mbə *he bought for him*, ró-wą̂mphą *I plowed for him*, ó-màmbgą *he accused me*, čùmphkhə *sow it for me*, ó-wą̂mp?k?ą *he plowed for you*.

n plus p, b, z, k, g, ph, kh, db, dg, zg, žg, c?, ?k?, t?p?, t?k?, č?p?, č?k?: rí-túnpǫ *I owe him*, rá-hònbə *I will look for him*, ó-zînzi *he took me*, túnkǫ *he owes me*, ó-zîngi *he took him for me*, rí-kɔ̀nphə *I grind for him*, ná-kɔ̀nkhə *you are grinding for me*, ró-hą̀ndbą *I saw for him*, ó-hñą̀ndgą *he saw me*, šénzge *shell it for me*, wénžgi *scold him for me*, ró-?wînc?i *I fed you*, ró-pón?k?ə *I sowed for you*, rá-wą̀nt?p?ą *I will mix it*, rí-hą̀nt?k?ą *I see you*, ró-wénč?p?i *I scolded him for him*, ó-wénč?k?i *he scolded you*.

ñ plus b, g, k?, ?k?: ró-?wìñbi *I fed hers*, ó-?yèñgi *he guided me*, ó-?yèñk?i *he guided you*, ró-péñ?k?e *I sent to you*.

š plus p, k, k?: pàšpə *he sweeps for him*,

[13] Also these single consonants occur in the stem formative, which later are relevant in secondary clusters and hence are listed here: b, d, g, z, ž, m, n, ñ, r, h, ?, š, c. ɔ́bə *to dig*, pódə *to sow*, khôgə *to pass by*, mèze *to harden*, mêže *to last*, hòmə *earth*, ûnə *to give*, íñi *to scatter*, t?ǫ́rǫ *firewood*, hǫ́hǫ *to roast*, k?è?ę *to complain*, mbášə *echo*, thìcį *to dry*.

[14] The morpheme -h- ~ -?- ~ -m- indicates a direct object. The morphemes indicating a person object are: 1st person -k- ~ -g- ∞ -z- 2nd person -k?- ∞ -c?-, 3rd person -p- ~ -b- ~ -ph- ~ -p?-. When consonants are brought together between the elements of a compound, between a stem formative and an enclitic or within a stem formative when an infix has been inserted, replacements sometimes take place affecting the specific clusters which occur. In the material which follows no attempt is made to describe morphophonemic rules governing these changes; but rather the specific clusters are listed since it is these which interest us at present. We hope to write a further paper at a later time describing the rather intricate morphophonemics of Mazahua. See, however, section 4 and footnote 10.

ną̀-k?âškə *he is disturbing me*, ró-pàšk?ə *I swept for you.*

s plus ?k?: ó-wás?k?ə *he watered (plants) for you.*

3.3. Secondary clusters occurring when an enclitic[15]: has been added to a simple stem: h plus k, pk, tk, ck, čk: rí-tə́hkə *I see*, rí-téhpkə *I follow a path*, kʷáhtkɛ *finish it*, šíhckə *tell me*, rí-péhčkə *I gather.*

kh, phkh, thkh, khth: ró-tǫ́khə *I won*, ró-ǫ̀phkhə *I wrote*, ím-bâthkhə *my pasture*, hâkhtho *smooth.*

t?k?, c?k?, č?k?, s?k?, ?k?, ?t?k?: ró-mát?k?ə *I called*, rí-híc?k?ə *I teach you*, rí-hwé̱č?k?ə *you will fan (fire)*, rí-chə̂s?k?ɛ *you will draw water*, ró-tǫ́?k?ə *I sewed*, ró-pá?t?k?ə *I heated it.*

m plus g, kh, k?: ró-tə̀mgə *I bought*, rá-tûmkhə *I will plant*, rá-šìmk?ə *I will wash dishes.*

n plus h, g, hn, th, kh, sh, zg, dg, k?, s?k?: ó-hñə̀nhi *they stacked*, ró-ûngə *I gave*, yə̀nhni *they stepped*, wą̀nthi *they mixed it*, rá-kə̀nkhə *I will grind*, šə́nshi *they peeled it*, sînzgə *take me with you*, ró-hą̀ndgə *I looked*, ró-pánk?ə *I threw away*, rá-pə́ns?k?ə *I will smell.*

ñ plus g, kh, k?: ró-kîñgə *I darned*, rí-kìñkhə *I think*, rá-pèñk?ə *I will wash (clothes).*

z, ž, r, plus g: ró-tèzgə *I finished*, ín-chêžgə *my skirt*, ró-phə̂rgə *I guarded.*

s plus k: rówáskə *I sprinkled.*

š plus kh: ró-pàškhə *I swept.*

[15] The enclitics entering into the clusters mentioned here, for the most part are: 1st person subject -kə ~ -khə ~ -k?ə ~ -gə, and 2nd person subject -kɛ ~ -khɛ ~ -k?ɛ ~ -gɛ. -k- occurs in the enclitic when a voiceless consonant occurs in the stem formative. -kh- occurs in the enclitic when h, a sequence of consonant plus h, or a sequence of h plus m, n, or ñ occurs in the stem formative. -k?- occurs in the enclitic when a sequence of consonant plus ?, a sequence of ? plus consonant, or b, d, m, or n occurs in the stem formative. -g- occurs in the enclitic following a vowel (that is, when the stem formative vowel is retained, or when the stem formative ?V is lost) and in certain instances following m or n. Other enclitics include: -hi *they* and -tho *only.*

? plus h: ó-sǫ́?hi *they spied.*

Secondary consonant clusters occurring in compounds: h plus p, t, c, č, k, kʷ, š, ch, th, št?: šə̀hpə́te *teacher*, bíhtu *clothing*, ?yáhci *shoe*, píhčɛ *ghost*, záhkíhñi *cactus*, mbóhkʷɛ *to be tired*, ndéhšə *barley*, šíhchǫ *a kind of herb*, óhtho *nothing*, c?íhšt?i *little girl.*

? plus w, y, hñ: pǫ́?wi *difference*, sə́?yɛ *to be sick*, šó?hñi *foreman.*

m plus p, b, g, gʷ, p?, ?y: ?yômpa *dry season*, hámbágə *big eater*, c?ímgɛ *meat*, ?yômgʷa *barefoot*, bémp?àt?ə *to lie face down*, šą́m?yɛ *mischievous.*

n plus t, d, č, s, š, ž, th, ch, sh, kh, čh, t?, č?, k?, s?, ?y: tánte *adult*, tánde *hare*, pə́nčə̀rə *reverse side*, ndə́nsìhñi *a kind of flower*, ndą̀nšą *banana*, šìnžə *to wash (face)*, šə́nthe *name of a town*, mènchàha *owner*, tánshèhe *big star*, shónkhíhmi *to taste*, pènčhɛ *guava*, phânt?ébi *a kind of grass*, sį̀nč?íhį *sleepyhead*, ndą̀nk?ìhmi *a kind of snake*, šìns?ə *wren*, šìn?yɛ *to wash (hands).*

š plus p, t, č, k, m, w, r, ph, kh, kʷ, kʷh, ?w, ?y: ìšpíhtu *pink cloth*, mbə̂šte *helper*, t?ə̂šč́ənə *white ox*, méškárə *gizzard*, t?ə́šmùza *a kind of fruit*, mbášwa *fiesta*, t?ə́šrʌ̀hnʌ *white flower*, t?ə́šphàdə *white horse*, hyʌ́škhə̀s?ə *embroidered belt*, zîškʷàte *one who shortchanges*, t?ə́škʷha *white rabbit*, k?ə́š?wɛ *small frog*, t?ə́š?yo *white dog.*

s plus k: šískə́mʌ *paper.*

č plus ?kʷ?: hwíč?kʷ?ą *trousers.*

r plus s, g, hm, sh: ngə̂rsìwi *rainbow*, nžə̀rga *poorly ground (corn)*, kʷhą̀rhmą *brother (of a man)*, ngárshèhe *Pleiades.*

4. Within the secondary clusters an interesting problem was noted. For a long time I had considered ŋ an allophone of n. ŋ occurred only with the velar stops in secondary clusters. n occurred before velar stops in root initial clusters as in ngùmə *house*, and in developed clusters between a first order proclitic and a root as in ín-khêže *my skirt.*

However, this interpretation of ŋ as an allophone of n caused considerable trouble.

I found contrasts between n and ŋ in secondary consonant clusters in which an enclitic had been added. Note these words: rí-ónkʔə *I cut* (from rí-ódə plus -gə) in which the stem formative vowel is lost, n replaces d in the stem formative with an accompanying change in the enclitic[15]; and rí-öŋkʔə (from rí-ôbə plus -gə) *I lie down*, in which the stem formative vowel is lost, ŋ replaces b and the enclitic follows the changes already mentioned.

ŋ also contrasted with ñ: ró-èñkʔə (from ró-èʔyi plus -gə) *I led*, with loss of the stem formative vowel, replacement of ñ for y and accompanying change in the enclitic. Notice also the contrast of n and ñ in root initial position: núʔu *to see*, ñùrə *to be wrinkled*.

Since ŋ contrasted with n before velar stops, and ŋ contrasted with ñ before velar stops, but there was no contrast between ŋ and m, I considered ŋ as an allophone of m. This interpretation was supported by the consonant cluster nŋg as in pònŋgə *pardon me*. If ŋ was interpreted as an allophone of n, then nŋg was a unique cluster in that there were no other clusters containing identical consonants to parallel this one.

The morphological data further supported this interpretation of ŋ as an allophone of m. n occurred before velar stops in secondary clusters when either n or d had occurred in the stem formative. Notice: ró-pónə *I turned it over*, with the addition of an enclitic is ró-pónkʔə; rí-ódə *I cut*, with the enclitic is rí-ónkʔə. ŋ occurred before velar stops in secondary clusters when either m or b had occurred in the stem formative: rí-hámə *I take*, with the addition of an enclitic is rí-háŋkʔə, ró-táɓʌ *I nailed*, with the addition of an enclitic is ró-táŋkʔə, ró-pámə *I turned around*, with the addition of the enclitic is ró-páŋgə.

CHEROKEE VERB MORPHOLOGY II*

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3.0. P (pronominal prefix)
3.1. Stem vowels following P
3.2. Subject pronominals
3.3. Subject-object pronominals
3.4. Other morphemes of class P

3.0. The purpose of section **3** is to state the morphemes and the distribution of the morphemes which are members of the distributional class P (pronominal prefix). For the most part class P morphemes indicate pronominal reference. Some additional morphemes outside the semantic range of pronominal reference but distributionally similar to P will be discussed in **3.4.** Class P morphemes are defined as occurring immediately before members of class S, verb stems. Members of P may or may not be preceded by members of class Pr. Formulaically class P occupies the position of — in the formula [⋕ (Pr)—S], i.e. P occurs after Pr in y-a-gw-al'sgísə *if I dance* (gw = *I*) but after / ⋕ / in g-alisgísgəgi *I was dancing* (g = *I*). In all cases P is followed by class S, verb stem.

3.1. Members of class S, verb stems, exhibit an initial vowel. Hence class P morphemes may be said to occur only before a vowel—any vowel, except when this vowel is dropped in accordance with the conditions set forth in **1.3.** The following examples illustrate six stems exhibiting six different stem initial vowels following first person prefix: g-alenía *I am starting*, g-ənósasga *I am sweeping*, g-ówelia *I am writing*, g-úiloa *I am washing* (*R*), g-eyóhəsga *I am teaching*, z-igádha *I know it.* (Stem initial vowels will be referred to throughout as stem vowels). As was seen in **1.3.1.2** there would appear to be some overlap in the distribution of stem vowels, i.e. stems having stem vowel i appear to be replaced by a when the stem vowel is preceded by third person singular and by one second person singular pronominal alternant. Examples: z-inúdheyoha *I am twisting it* but g-anudheyaga *he/she just twisted it*, a-núdheyohəgi *he was twisting it*, z-anúdheyolóhisgo *did you ever twist it?* cf. h-inúdheyóləhə *twist it after awhile!* These forms may be compared with -inudhe-*twist* following other pronominals: o-s-d-inúdheyoha *another and I twist it*, i-n-inúdheyoha *you and I twist it*, s-d-inúdheyoha *you du. twist it*, i-z-inúdheyoha *you pl. twist it.* Forms with stem vowel a: g-adasga *I am hanging up* (*R*), g-adasga *he/she is hanging up* (*R*), uw-adanəgi *he/she did hang up* (*R*), z-adanəgi *you did hang up* (*R*). Third person singular and second person singular forms before other stem vowels retain the stem vowel throughout. Examples: g-əgia *I am unraveling it*, g-əgisgoi *he/she habitually unravels it*, zhesd z-əgísəgi *don't you unravel it*, h-əgísgesdigwo *you keep on unraveling it*, day-osd-əgisi *another and I will unravel it*, g-ósəsga *I am making it*, g-o'səsgəgi *he/she was making it*, uw-o' sənəgi *he/she did make it*, z-o' sənəgi *you did make it*, an-o'səsga *they are making it*, d-osd-o'səsgoi *another and I habitually make them*, d-ogin-o'sənəgi *another and I did make them.*

From the foregoing examples we may state that the third person singular pronominal form occurring with stem vowel i is ga with a overriding stem vowel i. Also, there is a second person singular alternant form za in which a overrides stem vowel i. Since overriding vowel forms occur with stem vowel i but not with other stem vowels

* The first part of this study has appeared in the immediately preceding issue of IJAL (No. 3, July, 1953).

and since pronominals before stem vowel i in these positions are equivalent to forms having stem vowel a we may ask if stem vowel a does not underlie stem vowel i in all positions except in third person singular and in second person singular alternant z. That is, stem vowel a occurs overridden by i in all positions except as stated above.[1]

There is considerable advantage in this analysis of stem vowels a and i. If we consider i as a separate stem vowel we must list the alternants of third person singular as ga ~ g X ø[2] with the additional statement that alternant ga when occurring with stem vowel i overrides i. The same treatment would be necessary for za *you sg.* On the other hand, if i is analyzed as an intrusive vowel overriding stem vowel a in the positions indicated above, we may indicate third person singular as g X ø. No statements of the relations holding between a and i are now necessary since only a occurs. Further support for considering stem vowel a as basic will be found in **4.1** where stem vowels o, e, ə, and u are analyzed as the result of a merger of stem vowel a with a following vowel.

3.2. It will be convenient to list the subject pronominals and the general conditions for alternation before proceeding to the detailed listing of conditions for alternations in class P. In the paradigms below are listed the subject pronominals. The paradigmatic arrangement of forms is given here only as a convenient means for illustrating pronominal alternants with different stems.

Pdg. IA follows: (1) z-inəgaĺa *I am cleaning;* (2) osd-inəgali?a *another and I are cleaning;* (3) oz-inəgali?a *others and I are cleaning;* (4) in-inəgali?a *you and I are cleaning;* (5) id-inəgali?a *you, others and I are cleaning;* (6) h-inəgali?a *you sg. are cleaning;* (7) sd-inəgali?a *you du. are cleaning;* (8) iz-inəgali?a *you pl. are cleaning;* (9) g-anəgali?a *he/she is cleaning;* (10) an-inəgali?a *they are cleaning.*

Pdg. IIA follows: (1) ag-iyoseha *I am hungry;* (2) ogin-iyoseha *another and I are hungry;* (3) og-iyoseha *others and I are hungry;* (4) igin-iyoseha *you and I are hungry;* (5) ig-iyoseha *you, others and I are hungry;* (6) z-ayoseha *you sg. are hungry;* (7) sd-iyoseha *you du. are hungry;* (8) iz-iyoseha *you pl. are hungry;* (9) u-yoseha *he/she is hungry;* (10) un-iyoseha *they are hungry.*

At first glance the foregoing sets of subject pronominals appear as two paradigms overlapping in 7 and 8. The purpose of the following sections is to indicate the conditions for the alternations between the two sets of subject pronominals.

3.2.1. Overt a before first person pronominals.

3.2.1.1. Overt a.[3] Many forms exhibit an overt a before first person pronominals. The conditions for the occurrence of a in these forms is morphological and is accounted for by listing the stems. Examples: a-gw-aduliha *I desire,* a-g'zəgi *I am sick,* a-g'zəzidi *I am about to be sick,* a-g-iyoseha *I am hungry,* də-g-igsdhani *I will vomit* (da + a + g), a-g-igonhiyoga *I am late,* a-g-igonhiyogi *I was late,* a-g-inowia *I tremble.*

3.2.1.2. Overt a as a discontinuous member with suffixes. In some stems the overt prefix a occurs as a discontinuous member of the following suffixes: -əgi *aorist,* -əhə *future imperative,* -əhi *indefinite past,* -ə *conditional,* -sdiyi *infinitive,* -oi *perfect past,* -di *inchoative.* Examples: a-gw-alənə́?-egi *I started,* cf. g-alenìa *I am starting,* y-a-gw-adón-ə *if I conjure,* cf. g-adonis-goi *I habitually conjure,* a-gw-adonə?i-di *I am about to conjure,* a-gw-agəsgwó-əgi *I did wash my face,* a-gw-aduli a-gw-al'zido-díyi *I want to instruct,* n-a-gw-al'zidohən-ói *I had already instructed,* a-g-

[1] z *2d sg.* occurs as an automatic alternant form of h. See **3.2.2** for conditions for alternation.

[2] X indicates morphological alternation.
~ indicates phonological alternation.
ø indicates zero morpheme.

[3] See form (1) in **2.1.**

isədhan-əgi *I stacked it up*, cf. z-isədhas-ga *I am stacking it up*.

3.2.2. Covert a before other pronominals. The presence of a is stated in **3.2.1.1** and **3.2.1.2** as occurring overtly before first person pronominals with g replacing z after a and gw replacing g after a. In non-first person forms a similar alternation occurs. ozo-'dan-əgi *others and I are building a fire* but ogo-'dan-əgi *others and I did build a fire*. Here g replaces z with the occurrence of -əgi *aorist*. The alternation z ~ g may be stated as occurring after covert a. Paradigm IB below lists pronominal forms which are preceded by neither overt nor covert a. Suffixes occurring with the stem in IB are a sample of suffixes not included in **3.2.1.2**. Pronominals in paradigm IB may be compared with pronominals in IIB which occur following overt and covert a suffixes listed in **3.2.1.2**.

Pdg. IB follows: (1) g-o'das-ga *I build a fire;* (2) day-osd-o'dan-i *another and I will build a fire;* (3) oz-o'das-gəgi *others and I were building a fire;* (4) in-o'das-ga *you and I are building a fire;* (5) id-o'da-ga *you, others and I just did build a fire;* (6) h-o'da-ga *you build the fire;* (7) sd-o'da-ga *you du. build the fire;* (8) iz-o'das-gei *I heard you pl. were building a fire;* (9) g-o'das-gei *I heard he was building a fire;* (10) an-o'das-gə́i *while they build the fire.*

Pdg. IIB follows: (1) a-gw-o'dan-əgi *I did build a fire;* (2) ogin-o'dan-idi *another and I are about to build a fire;* (3) og-o'dan-idi *others and I are about to build a fire;* (4) gin-o'dan-əgi *you and I did build a fire;* (5) ig-o'dan-əgi *you, others and I did build a fire;* (6) zhesd z-o'dan-ə́hə *don't you build the fire;* (7) zhesd sd-o'dan-ə́hə *don't you du. build the fire;* (8) yi-iz-o'dán-ə *if you pl. build a fire;* (9) uw-o'dan-ei *I heard he did build a fire;* (10) unduli un-od'-díyi *they want to build a fire.*

The alternations occurring in the above paradigms may be seen by comparing equivalent numbers of I and II, e.g. the alternation occurring in 6 in I and II may be stated as h *you sg.* replaced by z after covert a; 2 in I and II may be stated as s *I* replaced by gi after covert a, and so on. The occurrence of overt and covert a serves to state the major conditions for pronominal alternation. Further alternations occur within pronominals with or without overt and covert a. All pronominal alternations are listed in **3.2.3**.

3.2.3.1. Automatic alternation. In the foregoing sections only certain morphemes within the pronominals have been indicated. The present section proceeds to mark all morphemes within the pronominal forms and to indicate the phonemically differentiable environments of these morphemes which give rise to morpheme alternants. In **3.2.1**–**3.2.2** it was possible to bring together into one set of forms what appeared to be two paradigmatic sets. There the presence of overt or covert a was stated as the condition for alternation. In the detailed listing of conditions for alternation it will be necessary to introduce a mark to indicate the presence of covert a. This mark will be the asterisk. We may now say that morphopheneme h *you sg.* appears as z when preceded by *, e.g. h-ə'dagazu *did you sg. place (R) in the fire?* but yi-*z-ə'dáne *if you sg. place (R) in the fire.* In accordance with the conditions for vowel loss and devoicing as stated in **1.3.1.2** it will not be necessary to list a voiceless alternant of each voiced morphophoneme.[4] Class Pr morphemes as well as morphemes occurring within the pronominal class are separated by a hyphen in the examples cited. In the environments not listed it is the unreplaced phonemic value of the morphophoneme that occurs.

The morphophoneme z *1 sg.* has six forms.

[4] **1.3.1.2** refers to the resultant devoicing of ' in stem initial position. It may also be noted that the loss of a vowel due to ' is considered the same as the pronounced vowel where vowels are stated as a condition for alternation. It is always possible to determine the lost vowel in the environment of ' by considering the first person form not preceded by prefix a.

(1) g before any vowel but i, and before i when z is preceded by a, *, or s. Examples: g-usóəsga *I am covering it*, g-alenía *I am starting*, g-édinega *I set out posts*, a-g-iyoseha *I am hungry*, i-*g-idəgi *you and I place* (*L*) *on the ground*, i-*g-adonəʔəgi *you and I conjured*, g-ə-iha *I am killing you*, yi-g-əy-əgi *I would unravel it for you*. When * occurs before alternant d. Examples: i-*g-adídhanəgi *you, others and I did drink*, cf. i-d-adídhasga *you, others and I are drinking*, yi-i-*g-adóne *if you, others and I conjure*, i-*g-aduliha *you, others and I desire*, i-*g-eluga *you, others and I shout*.

(2) gw when preceded by a or s and followed by any vowel but i. Examples: a-gw-alenə'əgi *I started*, a-gw-o'danəgi *I did build a fire*, a-gw-e'dinésəgi *I did set out posts*, a-gw-oye'əgi *he burned me*, a-gw-usónəgi *he covered me*, s-gw-elísini *you sg. are leading me*, s-gw-d'inísesdi *you will be protecting me*.

(3) gi when preceded by * or s and followed by n. Examples: o-*gi-n-usónəgi *another and I did cover it*, o-*gi-n-e'dinəgi *another and I did set out posts*, d-o-*gi-n-daləgi *another and I killed each other*, de-s-gi-n-eyóhəsga *you are teaching another and me*, s-gi-n-igowadhihazu *do you see another and me?*

(4) i before n and z. Examples: i-n-adawoa *you and I are bathing*, i-n-udəgísgəgi *you and I were gathering up several* (*R*) *from the ground*, i-n-asuyagia *you and I are selecting it*, i-z-ən;əsəgi *I sent all of you*, i-z-əy-óligi *I am acquainted with all of you*.

(5) s before d except when preceded by *. Examples: o-s-d-əno'sasga *another and I are sweeping*, o-s-d-o'welia *another and I are writing*, o-s-d-inógali?a *another and I are cleaning it*, d-o-s-d-s'uyagi *another and I each selected an inanimate object*, d-o-s-d-inəwia *another and I doctored them*, s-d-əy-adhédəhəsga *another and I are questioning you*, s-d-əy-əgísgəgi *another and I were removing you from the water*, s-d-əy-oyeəgi *another and I burned you*.

(6) d when preceded by i and followed by a vowel. Examples: i-d-adíhasga *you, others and I are drinking*, i-d-ogisgagi *you, others and I did drink*, i-d-u' dagisgoi *you, others and I habitually pick up* (*R*), i-d-g'iləsi *you, others and I are riding*, i-d-ilogánohnazu *did you, others and I finish hoeing?*

The morphophoneme h- *2 sg.* has two forms.

(1) z when preceded by*. Examples: yi-*z-adonə́'ə *if you would conjure*, *z-usənəgi *you did cover it*, wi-*z-aguluga *you go ahead and belch!* *z-alíənhiləgi *you did beat it*, *z-ayó'əgizu *did you look for it?* yi-*z-ad-a'suyagísə *if you select yourself*.

(2) s before d, g. Examples: s-d-e'esdizu *will you du. be living?* s-d-ilogánəhə *you du. hoe after awhile*, s-d-e'əsgəgi *you du. were putting* (*F*) *in the water*, s-g-'iha *you are killing me*, s-gw-elísinísəgi *you were leading me*, y-s-'gw-usónə *if you cover me*.

The morphophoneme a *3 sg.* has three forms.

(1) g before stem vowels e, ə, o, u. Examples: g-édinega *he/she is putting out posts*, da-g-o'welani *he/she will write*, g-ə'sga *he/she is weaving*, g-usónəgi *he/she did cover it*. Before stem vowel a when preceded by a. Examples: a-g-a'suyagia *he/she selects him/her*, cf. a'suyagia *he/she selects it*, a-g-awoa *he/she is bathing him/her*.

(2) uw when * precedes alternant g except before a followed by n, l. Examples: *uw-osənəgi *he/she made it*, *uw-o'danei *I heard that he/she did build a fire*, *uw-o'danidi *he/she is about to build a fire*, cf. g-o'dasga *he/she is building a fire*.

(3) u when * precedes alternant g before a followed by n, l. Examples: *u-logánəgi *he/she hoed*, cf. g-alogia *he/she is hoeing*, *u-liẇozəgi *he/she died*, cf. g-aliẇoga *he/she is dying*, *u-nagósəgi *he/she moved*, cf. g-anagósgoi *he/she habitually moves*. When * precedes alternants a X ø. Examples: *u-n-o'welanəgi *they wrote*, cf. a-n-o'welia *they are writing*, d-*u-dáyosei *I heard that he/she surrendered*, cf. d-ø-adeyohi *he/she just did surrender*, *u-dond'anei *he/she conjured in the wrong manner*, cf. ø-adonə́'ohna

he/she has finished conjuring, *u-n-adídhahei *I heard they took a drink*, cf. ø-adídhasgi *he/she is a drinker*, *u-líənhiləgi *it did beat him*, *u-yelhoha *it cuts him*, *u-n-iyelhoha *it cuts them*.

The morphophone g *an. obj.* has three forms.

(1) i after z and h. Examples: z-i-igowadhiha *I am looking at him/her*, z-i-inəgalə?əgi *I cleansed him/her*, z-i-iyoləgi *I shot him/her*, h-i-inəwánəgizu *did you doctor him/her?* h-i-iyoiha *you are shooting him/her*, cf. h-iyo?iha *you are shooting it*.

(2) z when preceded by a. Examples: a-z-iiha *he/she is killing him/her*, a-z-indega *he/she sells him/her*, a-z-iyo?a *he/she looks for him/her*.

(3) a before i (a + i = e). Examples: e-n-ighehi *you and I are chasing him/her* (a + i-n), e-n-asuyagísəgi *you and I chose him/her*, e-n-oyeha *you and I burn him/her*, e-d-əgísəgi *you, others and I did remove him/her from the water*.

The morphophoneme ge *3 pl. subj.* has two forms.

(1) g before any vowel except i, a. Examples: de-g-o-g-i?iha *they are killing others and me*, de-g-o-gi-n-degoi *they habitually sell others and me*, de-g-o-gi-n-iyo?iləgi *they shot another and me*.

(2) ga before a (a + a = ə). Examples: gə-g-iyhoha *they are looking for me*, gə-gw-s'uyagísəgi *they selected me*, gə-'g-inəwia *they doctor me*, gə-gw-oyehəgi *they burned me*, gə-wagowadhiha *they see him/her*, gə-w'gia *they are removing him/her from the water*.

The morphophoneme de *3 pl. obj.* has the form d before any vowel except i. Examples: d-an-əgalihəgi *they cleansed him*, d-a-n-eyóhəsga *they are teaching them*, d-a-g-ilíenhiləgi *I did beat them*, d-o-g-elísinásəgi *others and I did lead them*, d-e-n-i'iha *you and I kill them*.

The morphophoneme adad *reflexive* has three forms.

(1) ad before stem vowel a. Examples: g-ad-awoa *I am bathing myself*, h-ad-ayohago *you shoot yourself*, g-ad-aiha *I am killing myself*, de-z-ad-alíənhiha *you pl. are beating each other*, ad-ayohiha *he is shooting himself*, cf. g-adad-owelaneha *I am writing to myself*.

(2) ud when preceded by * before stem vowel a. Examples: *ud-ayezsd'anəgi *he laughed at himself*, *ud-ayóhləgi *he shot himself*, cf. ad-ayohiha *he is shooting himself*, *ud-a'nəwanəgi *he doctored himself*.

(3) udad when preceded by * before other stem vowels. Examples: *udad-eyóhnəgi *he taught himself*, *udad-oyehəgi *he burned himself*, *udad-úsənəgi *he covered himself*.

The morphophoneme i *pl.* has the form iy before any vowel except i. Examples: s-g-iy-elísinásəgi *you pl. did lead me*, s-g-iy-usáəsga *you pl. are covering me*, s-g-iy-oyea *you pl. are burning me*, cf. s-g-iiha *you pl. are killing me*.

The morphophoneme n *general person*[5] has four forms.

(1) ə when preceded by g, z, d, or before i in which case i is dropped. Examples: g-ə-goəgi *I saw you*, g-ə-nohiseləgi *I told you*, g-ə-nohiselə *I am telling it to you*, cf. z-inoheselə *I am telling it to him*, g-ə-góəgi *I saw you*, cf. z-igoa *I see him*.

(2) əy before any vowel except i. Examples: yi-g-əy-əgii *I would unravel it for you*, cf. g-əgia *I am unraveling it*, g-əy-asuyagia *I am selecting you*, g-əy-usónəgi *I covered you*, g-əy-odaneləgi *I did build a fire for you*, cf. g-ódasga *I am building a fire*.

(3) z when preceded by i. Examples: i-z-ənásəgi *I sent you all*, i-z-adonəhizu *did you all ever conjure?* i-z-o'welanəgi *you all wrote it*, i-z-iloganáhizu *did you hoe? you all wrote it*, i-z-iloganáhizu *did you hoe?*

(4) d when preceded by s. Examples: d-o-s-d-u?iloa *another and I are washing several* (*R*), o-s-d-'iləgi *another and I killed him*, y-o-s-d-s'uyagisə *if another and I select him*.

3.2.3.2. Non-automatic alternation. The following form exhibits an alternant which

[5] For a discussion of this form see **3.2.5.**

is stateable in morphologically differentiable environments.

The morphophoneme a *3 sg.* has three forms.

(1) g before some stems with stem vowel a. Examples: g-a'dasga *he/she is hanging up* (*R*), cf. g-ȧdasga *I am hanging up* (*R*), g-adawoa *he/she is bathing*, cf. g-adawoa *I am bathing*, g-adóosga *he/she is falling*, g-agwayo'iha *he/she is picking it*, cf. z-igwayóiha *I am picking it.*

(2) ø before some stems with stem vowel a. Examples: ø-adídhasgoi *he/she habitually drinks*, ø-adonȧ́ʔidóhoi *he/she habitually goes about conjuring*, ø-al'zidóhəsgesdigwo *he/she will continue to instruct*, ø-aliʔeligi *he/she was happy*, ø-al'sgisidoha *he/she is dancing about.*

(3) * with non-first person forms in the subject-object combinations in rows 9 and 11 and columns 10 and 12. See subject-object chart, **3.3.1**.

The morphophoneme de *3 pl. obj.* has the form dega in free variation before z *1st sg.* Examples: dega-z-iyoíha *I shoot them*, cf. de-z-iyoíha *I shoot them*, dega-z-iyəsgiyiha *I am choking them*, cf. de-z-iyəsgiyiha *I am choking them.*

The morphophoneme z *1 sg.* has the form ziy after dega *3 pl. obj.* before stem vowels other than i. Examples: dega-ziy-eyóhnəgi *I taught them*, dega-ziy-asoyga *I point at them*, cf. de-g-asoga *I point at them.*

3.2.4. Having stated the conditions for alternation among the morphemes occurring in the pronominal unit, it is now possible to indicate these forms in morphophonemic notation. As in class Pr morphemes, here also it is not necessary to introduce new morphophonemic symbols since, as has been shown, it is possible to differentiate phonemically between morphemes exhibiting a given alternation and those which do not. The subject pronominals are:

1 sg., z: z-iyȯha *I am shooting*, z-asua *I am eating liquid-like food*, a-z-azónasdi *I am a deceiver*, a-'z-iwasga *I am purchasing it.*

1 sg. + 3 sg., o-z-n: o-z-n-əno'sasgəgi *another and I were sweeping*, o-*z-n-əno' sanəgi *another and I did sweep*, n-o-*z-n-adawói *another and I had already bathed*, o-*z-n-s'uyagísəgi *another and I did select it*, o-z-n-ə'sgwaloza *another and I just cracked* (*R*).

1 sg. + 3 pl., o-z: d-o-z'-gilósgoi *others and I habitually wash* (*F*), o-z-inehesdi *others and I will be holding* (*L*), d-o-*z-iha *others and I own several* (*R*), o-z-d'ədəhəsga *others and I are questioning him*, o-z-elísini *others and I lead it*, o-*z'-gísəgi *others and I removed* (*F*) *from the water.*

1 sg. + 2 sg., z-n: z-n-inəgaliʔa *you and I are cleansing it*, z-n-adawósgəgi *you and I were bathing*, *z-n-adawóəgi *you and I did bathe*, z-n-iwadhə *you and I just found* (*R*), *z-n-iwadhəhidi *you and I are about to find* (*R*).

1 sg. + 2 sg. + 3 pl., i-z: i-z-adídhasga *you, others and I are drinking*, i-z-anesgeha *you, others and I are building a house*, i-z-edolídohəgi *you, others and I were just walking about*, i-*z-izəzi *you, others and I spilled a liquid*, i-*z-adulísgəgi *you, others and I were desiring it*, i-z-d'əgia *you, others and I are listening.*

2 sg., h: h-asuyagi *you sg. selected it*, h-o'daga *you sg. build the fire!* *h-s'iwisȧ́hisgo *did you sg. ever paint?* *h'-awasga *you. sg. are purchasing it*, h-asoyəli *you sg. wave your arm!* *h-s'oyehəgizu *did you sg. wave your arm?*

2 du., h-n: h-n-adaginadiha *you du. are knocking it down*, h-n-ighahəa *you du. are moving it*, h-n-agȧ́ini *you du. are swimming along*, h-n-asgosgozu *do you. du. smoke?*

2 pl., i-n: i-n-azoʔihəgi *you pl. were crying*, i-n-anelohəsgoi *you pl. habitually play*, i-n-ədhəsidi *you pl. are growing up*, i-n-ənuwozu *are you pl. getting dressed?* de-i-n-inogisdhani *you pl. are going along singing.*

3 sg., a: *a-o'danəgi *he/she did build a fire*, a'-ənohna *he/she has finished putting* (*F*) *in the water*, *a'-anidi *he/she is about to put* (*F*) *in the water*, ø-a'udiga *he/she just did put* (*L*) *into the water*, ø-a'uyise *he/she*

just removed (*L*) *from the water*, a-ugi *he/she just did remove* (*R*) *from the water*, *a-əgi *he/she just did remove* (*F*) *from the water*, *a-nósəgi *he/she did put* (*R*) *on the ground*, a-d'ósədisgái *while he/she was hanging up* (*L*), *a-əsgalánei *I heard that he/she did hide* (*F*), da-a-usəni *he/she will put on a cover*, *a-udhanidi *it is about to snow*, a-udhisgoi *it habitually snows*, *a-udhawólhazu *has it stopped snowing?* a-o'welanohna *he/she has finished writing*, *a-o'welánei *I heard that he/she wrote it.*

3 pl., a-n: a-n-əsgaláəsga *they are hiding* (*F*), a-n-i'sdəgósidóhoi *they habitually go about scraping it*, a-n-adadésidohegi *they were limping about*, a-n-adəlisgesdigwo *they will continue to breathe*, d-a-n-il'disgei *I heard that they canned several* (*R*), a-n-asaa *pl.* (*F*) *are lying above the ground*, a-n-a?a *pl.* (*F*) *are lying on the ground*, a-n-ə'əsgəgi *they were putting* (*F*) *in the water*, *a-n-duli *a-n-'uyísədíyi *they want to remove* (*L*) *from the water*, y-*a-n-i?údə *if they put* (*L*) *in the water.*

3.2.5. Pronominal structural units and meanings. The preceding sections stated the conditions for pronominal alternation and indicated a morphophonemic notation which represented in a single symbol all the automatic variants of a given morpheme. A mere listing of subject pronominals fails to indicate the structural members which make up each pronominal form. There remains, then, an additional step in the description of subject pronominals. All subject pronominal forms will now be divided into individual morphemes with accompanying meanings. For examples, see the foregoing.

1. z *I*
2. o-z-n < o *exclusive* + z *I* + n *another person*
3. o-z < o *exclusive* + z *I*
4. z-n < z *I* + n *you sg.*
5. i-z < i *plural* + z *I*
6. h *you sg.*
7. h-n < h *you sg.* + n *another person*
8. i-n < i *plural* + n *you sg.*
9. a *he, she, it*
10. a-n[6] < a *he, she, it* + n *others*

It is noted that it is extremely difficult to correlate forms with meanings in some of the categories. The purpose throughout has not been to correlate forms with meanings but rather to state the distributions of a given form and to observe the morphophonemic replacements which occur. A semantic analysis of P morphemes would result in a somewhat different morpheme list than the one presented here. This is particularly apparent in the form labeled *general person* in **3.2.3.1.** The form n has a meaning which ranges over *another third person*, *second person* and *plural person or things*, e.g. o-z-n-ali' eli'gesdi *another and I* (*excluding you*) *will be happy*, z-n-ine' nasga *you and I repaired the pathway*, a-n-inəliya *they just smeared grease on it*, a-n-adóosgoi *they* (*things*) *habitually fall off.* It will be further found that members of morphophonemic n may occur together in subject-object combinations, as de-z-n-n-iha *I am killing you du.* (phonemically de-s-d-ə-iha). See the chart in **3.3.1** for other such combinations. The advantage of a strictly distributional consideration of forms is that it serves to indicate the morphophonemic alternations. It also has the distinct advantage of defining meanings in terms of forms in their distributions. We need not be concerned for the lack of correlation of form with meaning per se since meaning (in this case) is given when we correlate form with form, i.e. state the complete distributions of each form. It is noted in pronominals 2 and 3 that o indicates exclusion of addressee. In number 3 the combination o-z indicates inclusion of two or more third persons, and in number 5 the absence of o *exclusive* indicates the inclusion of addressee.

3.3. The purpose of the present section

[6] There is a 3d dual which is rare. Third person dual prefixes de to a-n. Examples: d-a-n-alid'gia *they du. escape*, d-a-n-didiha *they du. arise from a prone position*, cf. a-n-didiha *they pl. arise from a prone position.*

is to expand the distributional statements of subject pronominals to include statements of the occurrence of subject-object combination prefixes. All morpheme alternants of class P (except as stated in **3.2.1**) were grouped into morphemes in **3.2.3.1**. Since the number of subject-object combinations is rather large and since it will be convenient to inspect the morphophonemic pronominal combinations, all subject-object pronominals are plotted on a two-dimensional chart in **3.3.1**.

3.3.1. Subject-object pronominal chart.[7] In the accompanying subject-object pronominal chart the object meanings are listed left to right across the top. Subject meanings are listed vertically at the left hand margin. Each subject row and object column contains a number. These numbers will serve as coordinates for identification of forms cited in **3.3.1.1**. The arrangement of subject names at the left hand margin and object names at the top of the chart reflects the general order of subject-object combinations. In addition, certain symbols are defined as follows. In forms separated by the / diagonal the order is subject-object. (Reflexive forms are also indicated after /.) In forms separated by the \ diagonal the object form precedes the subject form. (*)[8] indicates that covert a may or may not occur. * indicates that covert a always occurs.[9] ø indicates zero morpheme. X indicates morphological alternation. + indicates free variation. Ref. indicates reflexive form. An arrow pointing to another square indicates that the forms in both squares are equivalent. No phonological alternation is indicated as all phonological alternants of a given morpheme occur in the chart as a single morphophoneme. For conditions for alternation see **3.2.3.1**. Morphophonemic notation greatly reduces the number of different marks that appear on the chart. The extent of this symbolic reduction may be seen by representing the phonemic value of any morphophoneme or group of morphophonemes in the chart. We may select at random any square, say 1–10 (read the left margin number first), apply the rules for alternation given in **3.2.3.1**, and one-one correspondence between marks and speech sounds is obtained. Given the morphophonemic forms of 1–10 as (*)z/ø X a\z we may derive the following: z/ø, a-g/ø, g/ø, a-gw/ø, and a\z. A chart composed of phonemic values contains a great number of forms and obscures a striking case of morphophonemic alternation.

The entire list of subject-object combinations introduces only four morphemes which were not found in the subject forms given in **3.2.5**. These are de *plural object*, g *ani-*

[7] The arrangement of the subject names at the left and object names at the top is similar to the chart used for Oneida pronominals in Floyd Lounsbury, Iroquois Morphology, Yale University Dissertation, 1949. However, that chart brings together numerous phonemic forms in a somewhat different geometric arrangement. The present chart is designed to indicate in a simple manner the total subject-object combinations. All object forms occurring with any subject form are seen by reading the forms to the right of the given subject pronominal. Since the order subject-object does not always obtain, the orders are indicated in each square. The advantage of representing forms morphophonemically makes it possible to see at a glance the total distribution of a given morpheme. I have benefited considerably from reading Lounsbury's dissertation.

[8] * occurs as a before first-person singular subject.

[9] Attention may be called to the forms in row 9 and in column 10. There it is noted that the diagonal is not used to indicate pronominal orders involving *. * which alternates with a (see 9-1, 1-10) has been set up as the conditioning environment for the two sets of pronominal alternations given in **3.2.2.** The position of * was arbitrarily stated to be immediately preceding the initial consonant members of the pronominal. Hence * which may be indicated as the alternant of a *3d sg.* occurs in a broken pronominal sequence and may not be set off against the rest of the pronominal unit by the diagonal divider mark, e.g. o*zn. It will also be noted that * occurs in the same position in row 11. It appears that the subject form in rows 9 and 11 (except in 9-1, 11-1) may be set up as zero. The occurrence of * in these rows would then be stated as occurring in the object forms after zero *3d sg. subject* and ge *3d pl. subject*.

mate object, ge *third person plural subject*, and adad *reflexive*. As is stated in the list of alternations, adad *reflexive* is indicated as having one member morphophonemically, adad. The last two morphophonemes represent phonemic zero when they occur before stem vowel a.

Empty spaces in the chart indicate that these subject-object combinations do not occur. Situations which would require the non-occurring subject-object combinations are satisfied by the use of two or more verbs joined by a conjunction, each verb expressing one of the pronominal forms listed in the chart.

3.3.1.1. The grammar of pronominal forms may now be said to be complete. However, a list of utterances, a dictionary, will be convenient for anyone wishing to work out alternate solutions to the problems treated here. Only a small number of verb stems will be used to illustrate the subject-object pronominals. Numbers from the chart will be used to identify the forms. The first number represents the numbered rows at the left margin and the second number indicates the column number from the top of the chart. A form is identified at the intersection of row with column. Pronominals are indicated morphophonemically as in the chart.

	1 1 sg.	2 1 sg. + 3 sg.	3 1 sg. + 3 pl.	4 1 sg. + 2 sg.	5 1 sg. + 2 sg. + 3 pl.	6 2 sg.
1 1 sg.	(*)z/adad					z/n
2 1 sg. + 3 sg.		o(*)zn/adad				zn/n
3 1 sg. + 3 pl.			o(*)z/adad			iz/n
4 1 sg. + 2 sg.				(*)zn/adad		
5 1 sg. + 2 sg. + 3 pl.					i(*)z/adad	
6 2 sg.	h/z	h/zn	h/z			(*)h/adad
7 2 du.	h/zn	↓	↓			
8 2 pl.	h/zi	↓	↓			
9 3 sg. an.	a/z	o*zn	o*z	*zn	i*z	*h
10 3 sg. inan.	↓	↓	↓	↓	↓	↓
11 3 pl.	ge/az	ge/o*zn	ge/o*z	ge/*zn	ge/i*z	ge/*h

	7 2 du.	8 2 pl.	9 3 sg. an.	10 3 sg. inan.	11 3 pl. an.	12 3 pl. inan.
1	z/nn	z/hn	z/g × (*)z/ø	(*)z/ø × a\z	dega\z + de\z	de\(*)z × de\az
2	zn/n	iz/n	ozn/ø	o(*)zn	de\ozn	de\o(*)zn
3	iz/n		oz/ø	o(*)z	de\oz	de\o(*)z
4			g\zn	(*)zn	de\zn	de\(*)zn
5			g\iz	i(*)z	de\iz	de\i(*)z
6			h/g	(*)h	de\h	de*h
7	hn/adad		hn/ø —→		de\hn —→	
8		in/adad	in/ø —→		de\in —→	
9	hn	ø/in	Ref. (*)a/dad | a/g × a/ø	ø/ø × (*)a/ø × (*)g/ø	de\ø × de\(*)a × de\(*)g —→	
10	↓	↓	*a	↓	↓	↓
11	ge/hn	ge/in	ge/*a + (*)an/ø	(*)an/ø	Ref. (*) an/adad | d/(*)an	

The marks / and \ indicating subject-object order are not repeated in the examples. Pr morphemes are set off from pronominals by a hyphen; likewise, the entire pronominal unit is separated from the verb stem by the same mark. In each set of utterances cited at least one form will be indicated phonemically to express the morphophonemic formulae for alternation.

(1-1) zadad-eyóhəsga *I am teaching myself* /gadad-eyóhəsga/, zadad-awoa *I am bathing myself* /gad-awoa/, *zadad-á'ihləgi *I killed myself* /agwadá-'ihlegi/.

(1-6) zn-iha *I am killing you* /gə-iha/, zn-goəgi *I saw you*, zn-nohiséləgi *I told it to you*, zn-asuyagia *I select you*, zn-úsənəg *I did cover you* /gəy-úsənəgi/.

(1-7) znn-gadhénohəgi *I did search for you du.* /sdə-gadhénohəgi/, dé-znn-nəwia *I am doctoring you du.*, znn-elísini *I am leading you du.* along /sdəy-elísini/, znn-olihgi *I am acquainted with you du.*

(1-8) zhn-gadhénoha *I am searching for you pl.*, zhn-nésəgi *I sent you pl.*, yi-zhn-lə *if I kill you all*, zhn-olihgi *I am acquainted with you pl.* /izəy-olihgi/, zhn-úsəəsga *I cover you pl.*

(1-9) zg-iyòləgi *I shot him/her* /zi-iyòləgi/, zg-inəgalĕəgi *I cleansed him/her*, z-ø-inəwia *I am doctoring him/her* /z-inəwia/, zg-adhə́dəhəsga *I am questioning him/her*, zg-oyeəhi *I burned him/her* /ziy-oyeəgi/.

(1-10) zø-iyòiha *I shoot it*, az-inadega *I sell it*, *zø-ilíənhiləgi *I did beat it* /ag-ilíənhiləgi/, zø-asoga *I point at it*, *zø'-gísəgi *I did remove (F) from the water* /agw'-gísəgi/, *zø-oyehəgi *I did burn it* /agw-oyehəgi/.

(1-11) degaz-iyòiha + dez-iyòiha *I shoot them* /degaz-iyòiha + dez-iyòiha/, degaz-ilíənhiha + dez-ilíənhiha *I beat them*, degaziy-asoga *I point at them*, degaziy-eyóhəsga + dez-eyóhəsga *I teach them.*

(1-12) dez-iyòiha *I shoot them inan.*, deaz-inadega *I sell them inan.* /dag-inadega/, deaz-ags' əysdi *I keep watch over them inan.*

/dagw-ags' əysdi/, dez-asənhiha *I touch them inan.*, deaz-oyəhegi *I burned them inan.*

(2-2) d-oznadad-a'iha *another and I are killing ourselves* /d-osdad-a'iha/, yi-d-o*-zndad-agóhə *if another and I see each other* / yi-d-ogind-agóhə /, d-oznadad-ódaneha *another and I are building fires for one another*, d-oznadad-eyóhəsga *another and I are teaching each other.*

(2-6) ann-iha *another and I are killing you*, znn-gadhénoha *another and I are searching for you* /sdə-gadhénoha/, znn-əgísəgi *another and I did remove you from the water*, znn-oyea *another and I burn you*, znn-úsənəgi *another and I cover you.*

(2-7) See (2-6).

(2-8) izn-whidhiha *another and I find you pl.*, izn-gow'diha *another and I see you pl.* /izə-gow'diha/, yi-d-izn-oyéə *if another and I burn you pl.*, izn-olihgi *another and I are acquainted with you pl.* /izəy-olighi/.

(2-9) oznø-i'iləgi *another and I killed him/her* /osd-i'iləgi/, oznø-ilíənhiləgi *another and I did beat him/her*, oznø-inəgaləhəgi *another and I did cleanse him/her.*

(2-10) o*zn-s'uyagísəgi *another and I did select it* /ogin-s'uyagísəgi/, o*zn-inəwánegi *another and I doctored it*, o*zn-ilíənhilegi *another and I beat it*, o*zn'-gísəgi *another and I removed (F) from the water* /ogin'-gísəgi/.

(2-11) deozn-i'iha *another and I are killing them*, deozn-inəwia *another and I are doctoring them*, deozn-ilíənhiləgi *another and I did beat them* /dosd-ilíənhiləgi/.

(2-12) deo*zn-s' uyagísəgi *another and I did select them inan.*, yi-deo*zn-inəwánə *if another and I doctor them inan.* /yi-dogin-inəwánə/.

(3-3) d-ozadad-a'iha *others and I are killing each other*, d-o*zadad-a'ləgi *others and I did kill each other* /d-ogad-a'ləgi/, d-ozadad-úsəəsga *others and I are covering each other*, d-ozadad-eyóhəsga *others and I are teaching each other.*

(3-6) See (2-8)

(3-7) See (2-8)

(3-9) ozø-inəwanohna *others and I finished doctoring him/her*, ozø-inewisgoi *others and I habitually doctor him/her*, ozø-inəwánidi *others and I are about to doctor him/her* /oz-inəwánidi/.

(3-10) o*z-s'uyagísəgi *others and I selected it* /og-s'uyagísəgi/, o*z-oyéhəgi *others and I burned it*, oz-s'uyagia *others and I select it* /oz-s'uyagia/, o*z'-gísəgi *others and I removed (F) from the water* /og' -gísəgi/.

(3-11) deoz-dhádəhəsga *others and I are questioning them* /doz-dhádəhəsga/, deoz-i'-ləgi *others and I did kill them*, deoz-inəgali'a *others and I are cleansing them*, deoz' -gia *others and I are removing them from the water* /doz' -gia/.

(3-12) deo*z-s'uyagísəgi *others and I selected them inan.* /dog-s' uyagísəgi/, deo*z-oyehəgi *others and I burned them inan.*, deo*z-elísinásəgi *others and I lead them (animals)*, deoz-inəgali'a *others and I are cleansing them inan.*

(4-4) de-znadad-a?iha *you and I are killing each other*, /denad-a?iha/, de-znadad-adhenoha *you and I are looking for each other*, de-*zndad-asuyagísəgi *you and I selected each other*, de-zndad-eyóhəsga *you and I are teaching each other*, yi-di-*zndad-eyóne *if you and I teach each other* /yi-di-gindad-eyónə/.

(4-9)[10] gzn-iyoihəgi *you and I shot him/her*, gzn-asuyagia *you and I select him/her* /en-asuyagia/ < a + in, gzn-ighehi *you and I chase him/her along*, gzn-inəwia *you and I doctor him/her.*

(4-10) yi-*zn-inəgaləhə *if you and I clean it*, *zn-iyo?ləgi *you and I shot it* /gin-iyo'ləgi/,

[10] It will be noted throughout the subject-object examples cited that ' occurs as a devoicing element with first person only when preceded by a, e.g. agiyezs' diha *I laugh at it* (also *he laughs at me*) but ziyes'asdiha *I laugh at him.* ' is restricted from occurring with stems which exhibit the an. obj. pronominal forms indicated in (4-9) and (5-9), e.g. phonemically eniyoiha *you and I shoot him/her* (en < a + in), cf. iniyo' iha *you and I shoot it;* edoyea *you, others and I burn him/her* (ed < a + id), cf. idoye'_a *you, others and I burn it.* It will also be noted that * which may or may not occur in column 10 does not occur with forms 2-9, 3-9, 4-9, or 5-9.

*zn-oyéhegi *you and I burned it*, zn-iyo'iha *you and I are shooting it* /in-iyoʔiha/.

(4-11) dezn-ilәgi *you and I killed them*, dezn-s'uyagia *you and I select them*, dezn-igowadhiha *you and I see them*, dezn-inәwia *you and I doctor them* /den-inәwia/.

(4-12) de*zn-inágalәhәgi *you and I cleansed them inan.* /degin-inágalәhәgi/, dezn-inegaliha *you and I are cleansing them inan.* /den-inegaliha/ < de + in, dezn-s'-uyagísәgi *you and I selected them inan.*

(5-5) de-izadad-aʔiha *you, others and I are killing each other* /de-dad-aʔiha/ < de + id, de-i*zadad-a'lәgi *you, others and I did kill each other* /de-gad-a'lәgi/ < de + id, de-da-izadad-eyohni *you, others and I will teach each other* /de-da-dadad-eyohni/ < de + da + id.

(5-9) giz-iiha *you, others and I are killing him/her* /ed-iiha/ < a + id, giz-әgia *you, others and I are removing him/her from the water*, giz-oyea *you, others and I are burning him/her* /ed-oyea/ < a + id, giz-asuyagia *you, others and I select him/her.*

(5-10) iz-iʔiha *you, others and I are killing it* /id-iʔiha/, iz' -gia *you, others and I remove (F) from the water*, i*z-s'uyagísәgi *you, others and I selected it*, i*z-oyéhәgi *you, others and I burned it.*

(5-11) deiz-i'nәwia *you, others and I doctor them* /ded-i'nәwia/ < de + id, deiz-oyeha *you, others and I burn them*, deiz-úsәәsga *you, others and I cover them.*

(5–12) deiz'-gísәgi *you, others and I removed pl. (F) inan. from the water*, dei*z-oyehәgi *you, others and I burned them inan.* /deg-oyehәgi/ < de + ig, dei*z-inәgalәhәgi *you, others and I cleansed them inan.*, dei*z-inәwánәgi *you, others and I doctored them inan.*

(6-1) hz-igowadhiha *you see me*, hz-'inәwia *you are doctoring me*, hz-elísini *you lead me along*, hz-ol'gi *you are acquainted with me*, hz-úsәdohda *you accidentally covered me* /sgw-úsәdohda/.

(6-2) hzn-igowadhiha *you see another and me*, de-hzn-iiha *you are killing another and me*, de-hzn-eyóhәsga *you are teaching another and me* /de-sgin-eyóhәsga/, de-hzn-inәwia *you doctor another and me.*

(6-3) See (6-1).

(6-6) hadad-ayó'aga *you shoot yourself!* *hadad-ayo'lәgi *you did shoot yourself* /zadad-ayo'lәgi/, *hadad-a'lәgi *you killed yourself*, hadad-oyeha *you are burning yourself.*

(6-9) hg-inәgali'a *you are cleansing him/her*, hg-inәwia *you are doctoring him/her* /hi-inәwia/, hg-iyoiha *you shoot him/her*, hg-usóәsga *you cover him/her* /hiy-usóәsga/.

(6-10) h-ilĩәnhiha *you are beating it*, *h-andega *you sell it*, h-әgia *you are removing (F) from the water*, *h-oyéhәgi *you did burn it* /z-oyéhәgi/, *h-s'uyagísәgi *you selected it.*

(6-11) déh-inәgalәhәgi *you did doctor them*, déh-iʔyoha *you are searching them*, déh-iyo'-iha *you are shooting them*, déh-eyohnәgi *you taught them*, déh-oyéhәgi *you burned them* /déh-oyéhәgi/.

(6-12) dé*h-anәgalәhәgi *you did cleanse them inan.*, dé*h-' anәwanәgi *you did doctor them inan.*, déh-ilĩәnhiha *you beat them inan.*, dé*h-oyéhәgi *you did burn them inan.* /déz-oyéhәgi/.

(7-1) See (6-2).

(7-2) See (6-2).

(7-3) See (6-1).

(7-7) dé-hn̈adad-aʔiha *you du. are killing each other*, dé-hnadad-asuyagizu *who do you du. select each other?* dé-hnadad-oyeha *you du. are burning each other* /dé-sdadad-oyeha/, dé-hnadad-eyóhәsga *you du. teach each other.*

(7-9) hnø-iʔiha *you du. are killing him/her/it* /sd-iʔiha/, hnø-s'uyagísәgi *you du. selected him/her/it* /sd-s'uyagísәgi/, hnø-oyehәgi *you du. burned him/her/it*, hnø'-gia *you du. are removing him/her/(F) from the water.*

(7–10) See (7–9).

(7-11) déhn-iyo'iha *you du. are shooting them an./inan.*, déhn-ilĩәniha *you du. are beating them an./inan.*, déhn-usәnәgi *you du. covered them an./inan.* /désd-usәnәgi/.

(7-12) See (7-11).

(8-1) hzi-inәgali'a *you pl. are cleansing me*, hzi-inәwánәgi *you pl. doctored me*, hzi-

iyȯiha *you pl. are shooting me* /sgi-iyȯiha/ hzi-úsəəsga *you pl. cover me* /sgiy-úsəəsga/.

(8-2) See (6-2).

(8-3) See (6-3).

(8-8) de-inadad-alíənhiha *you pl. are beating each other*, de-inadad-anəwia *you pl. doctor each other*, de-inadad-asuyagísegi *you pl. selected each other* /de-zadad-asuyagísəgi/, de-inadad-oyeha *you pl. are burning each other*.

(8-9) inø-i?iha *you pl. are killing him/her/it*, inø-s'uyagia *you pl. select him/her/it* /iz-s'uyagia/, inø'-gia *you pl. remove him/her/(F) from the water*, inø-indega *you pl. sell him/her/it*, inø-eyóhəsga *you pl. teach him/her/it*.

(8-10) See (8–9).

(8-11) déin-i?iha *you pl. are killing them*, déin-iyó?iha *you. pl. shoot them an./inan.*, dein-inəwia *you. pl. doctor them an./inan.* /dez-inəwia/ < de + iz, déin-s'uyagia *you pl. select them an./inan.* /déz-s'uyagia/ < de + iz.

(8–12) See (8–11).

(9-1) az-ighahəa *he/she is moving me in a sitting position*, az-'inohiseha *he/she tells me*, az-iyo'iha *he/she is shooting me*, az-dhédəhəsga *he/she questions me* /agw-dhédəhəsga/, az-oyeha *he/she burns me*, az-úsəəsga *he/she is covering me* /agw-úsəəsga/.

(9-2) o*zn-indinásəgi *he/she sold another and me* /ogin-indinásəgi/, o*zn-oyeha *he/she is burning another and me*, o*zn'-gia *he/she removed another and me from the water* /ogin'-gia/, o*zn-usəəsga *he/she covers another and me.*

(9-3) o*z-s'uyagia *he/she selects others and me*, o*z'-gia *he/she removes others and me from the water* /og'-gia/, o*z-elísinísəgi *he/she leads others and me along*, o*z-iyo?iha *he/she shoots others and me.*

(9-4) de-*zn-iȟəwánəgi *he/she doctored you and me*, de-*zn-i?iha *he/she is killing you and me*, de-*zn-inəgaləhəgi *he/she did beat you and me*, de-*zn-oyeha *he/she burns you and me* /degin-oyeha/.

(9-5) de-i*z-ilíənhiha *he/she beats you, others and me* /deg-ilíənhiha/ < de + ig, de-i*z-iyo?iha *he/she shoots you, others and me*, de-i*z-s'uyagia *he/she selects you, others and me* /deg-s'uyagia/ < de + ig, de-i*z'-gia *he/she removes you, others and me from the water.*

(9-6) *h-'iha *he/she is killing you sg.*, *h-ayo?iha *he/she is shooting you sg.*, *h-e?yóhəsga *he/she teaches you sg.*, *h-úsəəsga *he/she covers you sg.* /z-úsəəsga/.

(9-7) dé-hn-i?iha *he/she is killing you du.*, dé-hn-i?yoha *he/she searches for you du.*, dé-hn-s'uyagia *he/she selects you du.* /désd-s'uyagia/, dé-hn'-gia *he/she removes you du. from the water*, dé-hn-oyeha *he/she burns you du.* /dé-sd-oyeha/.

(9-8) øin-i'iha *he/she is killing you pl.*, øin-igowadhiha *he/she sees you pl.* /iz-igowadhiha/, øin-s' uyagi *he/she just selected you pl.*, øin-ey'óhəsga *he/she teaches you pl.*, øin-úsəəsga *he/she covers you pl.*

(9-Ref.)[11] adad-ayezhdiha *he/she laughs at self*, adad-ayo?iha *he/she is shooting self*, adad-anəwia *he/she doctors self* /ad-anəwia/, *adad-anəwánəgi *he/she doctored self* /ud-anəwánəgi/.

(9-9) ag-iiha *he/she kills him/her*, ag-iyoiha *he/she shoots him/her* /az-iyoiha/, ag-oyeha *he/she burns him/her*, ag-úsənəgi *he/she covered him/her*, ag-awoa *he/she bathes him/her* /ag-awoa/, ?ø-anəwia *he/she is doctoring him/her* /?g-anəwia/.

(9-10) øø-a?iha *he/she kills it* /a?iha/, ø-alíənhiha *he/she beats it* /g-alíənhiha/, *ø-gs'eyasdi *he/she watches over it* /u-gs'eyasdi/, gø-awoa *he/she bathes it* /g-awoa/, ø'-gia *he/she removes (F) from the water* /g'-gia/, øø-a'ləgi *he/she killed it* /u'ləgi/, øø-yo'ləgi *he/she shot it* /uyo'ləgi/, *ø-oyéhəgi *he/she burned it* /uw-oyéhgəi/, *ø-úsənəgi *he/she covered it* /uw-úsənəgi/.

(9-11) deø-a?iha *he she kills them an./inan.* /d-a?iha/, de*-a'ləgi *he/she did kill them an./inan.* /du'ləgi/ de'a-anəwia *he/she doctors them an./inan.* /de'g-anəwia/, de*a-

[11] Third person singular when not indicated as ø appears in the phonemic form merged with the stem vowel if this vowel is i or a. Hence no pronominal division is indicated.

ndega *he/she sells them an./inan.* /dundega/, deø-ayoʔ iha *he/she shoots them an./inan.* /d-ayoʔiha/, dea-awoa *he/she bathes them an./inan.* /deg-awoa/, de*a-awóəgi *he/she bathe them an./inan.* /duwóəgi/, de*g-oyéhəgi *he/she is burning them an./inan.* /duw-oyéhəgi/.

(9-12) see (9-11), (10-1) see (9-1), (10-2) see (9-2), (10-3) see (9-3), (10-4) see (9-4), (10-5) see (9-5), (10-6) see (9-6), (10-7) see (9-7), (10-8) see (9-8).

(10-9) *a-odesdiha *it trips him/her* /uw-odesdiha/, *a-yélhoha *it cuts him/her*, *a-líənhiləgi *it did beat him/her*, *a-ńəwia *it (medicine) is doctoring him/her* /u-ńəwia/, day-*a-éhisdaneli *it will injure him* /day-uw-éhisdaneli/, *a-yelsdhanəgi *it cut him accidentally* /u-yelsdhanəgi/.

(10-10) see (9-10), (10-11) see (9-11), (10-12) see (9-11).

(11-1) geaz'-iha *they are killing me*, geaz-i' yoha *they are searching for me* /gəg-i'yoha/, geaz-s'uyagia *they select me* /gəgw-s'uyagia/, geaz-oyeha *they are burning me* /gəgw-oyeha/, geaz-e'yóhəsga *they are teaching me.*

(11-2) de-geo*zn-iʔiha *they are killing another and me*, de-geo*zn-iyohiha *they are shooting another and me* /de-gogin-iyohiha/, de-geo*zn-e'yóhəsga *they teach another and me*, de-geó*zn-úsəəsga *they cover another and me* /de-gógin-úsəəsga/.

(11-3) de-geó*z-i'iha *they are killing others and me*, de-geó*z-inəgaliha *they are cleansing others and me* /de-góg-inəgaliha/, de-geó*z-oyea *they burn others and me*, de-geó*z-usəəsga *they cover others and me* /de-gógusəəsga/.

(11-4) de-gé*zn-iʔiha *they are killing you and me* /de-gégin-iʔiha/, de-gé*zn-iyohiha *they shoot you and me*, de-gé*zn-nágaliha *they chase you and me*, de-gé*zn-e'yóhəsga *they teach you and me*, de-gé*zn'-gia *they remove you and me from the water* /de-gégin'-gia/.

(11-5) de-géi*z-iyohiha *they are shooting you, others and me* /de-gég-iyohiha/ < de-ge + ig, de-géi*z-i'newia *they doctor you, others and me*, de-géi*z-oyeha *they burn you, others and me*, de-géi*z-usəəsga *they cover you, others and me* /de-gég-usəəsga/ < de-ge + ig.

(11-6) ge*h-anágaliha *they cleanse you sg.*, ge*h'-anəwia *they doctor you sg.* /gez'-anewia/, ge*h-s'uyagia *they select you sg.*, ge*h-oyeha *they burn you sg.*, ge*h-úsənəgi *they did cover you sg.* /gez-úsənəgi/.

(11-7) de-géhn-iiha *they are killing you du.*, de-géhn-iyohiha *they are shooting you du.*, de-géhn-i' nəwánəgi *they did doctor you and me* /de-gésd-i' newánəgi/, de-géhn-s' uyagia *they select you du.* /de-gésd-s'uyagia/.

(11-8) de-géin-ilíənhiha *they beat you pl.* /de-géz-ilíənhiha < de + iz.

(11-9) ge*a-ayohiha *they are shooting him/her* /gəw-ayohiha/ < gə + u + a, ge*a-s' uyagia *they select him/her*, ge*a-usəəsga *they cover him/her*, ge*a-e' yóhəsga *they teach him/her*, *anø-iyohləgi *they shot him/her* /un-iyohləgi/, anø-usəəsga *they cover him/her* /an-usəəsga/.

(11-10) See second alternant (11-9).

(11-Ref.) d-*andad-a'ləgi *they killed each other* /d-und-a'ləgi/, d-andad-agowadhiha *they see each other*, d-andad-e'yóhəsga *they teach each other* /d-andad-e'yóhəsga/, d-*andad-úsənəgi *they covered each other* /d-un-dad-úsənəgi/.

(11-11) d-an-i'iha *they are killing them an./inan.*, d-*an-dinósəgi *they sold them an./inan.* /d-un-dinósəgi/, d-an-i'yoha *they search for them an./inan.*, d-*an'-gísəgi *they removed them an./inan. from the water*, d-an-e' yóhəsga *they taught them an./inan.*

(11-12) See (11-11).

3.4. This section states the occurrence of the few remaining morphemes in class P which were not discussed in **3.1—3.3.** (adad *reflexive* will be repeated here for the purpose of illustration.) The morphemes of this group are isd *non-determinative aspect;* is *upper position;* adad X al *reflexive*, in (*F*), iya (*L*), ine (*Q*).

3.4.1. Stem vowel position with class P morphemes. It was found in **3.1** that considerable economy of statement could be gained by considering a as the stem vowel which underlies stem vowel i. Further sup-

port for this analysis may be seen in the stem vowel accompanying the class P morphemes of this section. We find z-iyó̱iha *I am shooting* with stem vowel i but z-isd-ayó̱iha *I am shooting but not to kill*. Here it appears there may be several points at which morpheme boundary markers may be placed. The stem vowel solution will depend on the choice we make in dividing the phoneme sequence into morphemes. In accordance with the analysis of third person pronominals in **3.1** it will be convenient to divide zisdayó̱iha *I am shooting but not to kill* as z-isd-ayó̱iha. This segmentation preserves the stem vowel as a and indicates that stem vowel a is not overridden by i in this position. Stem vowel a may be seen in the following forms which employ the class P morphemes of this section. h-is-ahəna *you move (R) above the ground!* cf. h-ihəna *you move (R) on the ground!* gad-aiha *I am killing myself*, cf. z-i̱iha *I am killing it*, da-z-in-awd'əhi *I will find (F)*, cf. da-z-iwd'əhi *I will find (R)*. There remains a single case in which i overrides stem vowel a. z-isdoyeha *I am shaving him* but g-al-isdoyeha *I am shaving myself*.

MATLAPA NAHUATL II: AFFIX LIST AND MORPHOPHONEMICS[1]

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0. Introductory
1. Automatic alternations
2. Affix list
3. Alternations peculiar to prefixes
4. Alternations peculiar to suffixes
5. Alternations peculiar to verb bases
6. Alternations peculiar to noun bases

0. Some morphemes have unique alternants, i.e. they occur in only one shape. Other morphemes occur in two or more complementarily distributed or freely variable alternants. The shape of alternants in complementary distribution is determined by (1) the position of the morpheme in a given sequence and/or (2) other morphemes in the sequence.

Morpheme alternations are of two types: (1) those that occur throughout the language, irrespective of the distribution class of the morphemes concerned, and (2) those incidental to morphemes of a particular distribution class. We treat the first type of alternations in **1.**, stating the conditions under which they are found, without listing the alternants themselves.

Alternations of the second type are dealt with by distribution classes: prefixes in **3.**, suffixes in **4.**, verb bases in **5.**, and noun bases in **6.** Where morpheme shapes are predictable in terms of word boundaries and/or other morphemes in the sequence, we use the single alternant sign (∼) to indicate morpheme alternants. Where the exact conditions under which alternants occur have not been ascertained, we use the double alternant sign (≈). Where we can only state the conditions of occurrence for certain alternants or certain groups of alternants of a given morpheme, we use parentheses and square brackets in our formulas to keep the two types of alternation separate.

1.1. In the author's previous paper on Matlapa Nahuatl,[2] a word medial contrast was noted between the sequences oral vowel + nasal consonant + oral vowel (V + N + V) and nasalized vowel + oral vowel (NV + V). The morphophonemic symbol N was adopted to indicate (1) morpheme final N, which occurs before another consonant (C), and (2) NV, which occurs before an oral vowel, a semivowel, and in phrase final: in the formula V + N + C, N represents a bilabial nasal before p; a velar nasal before k^w and k; a dental nasal before other consonants; elsewhere, V + N represents NV. Examples: kiˑmiktih *he killed them*, kiˑNita *he sees them*; aNpakiˑh *you (pl.) are happy*, aNkiteˑ-motiyahkeˑh *you (pl.) went looking for it*, aNisʌkakatitoyaˑh *you (pl.) were lying*, aNteˑ-čsaˑlohkeˑh *you (pl.) added us*, aNweckatiaˑh *you (pl.) were laughing*, nepa aNyahkeˑh *you (pl.) were there*; kiwaˑliˑkah ičaN *he carried it home*.

1.2. Phrase medial VN and VˑN alternate respectively with V and Vˑ; the latter two occur before morpheme initial nasal, the former two before other morpheme initials. We cite alternants showing such variation in only one shape, namely with the nasal: kiˑN-, *third person plural goal*; this represents alternants kiˑN- and kiˑ-. However, we show the alternative shapes in examples for full utterances: šikiˑNčia *wait for them!*, nikiˑ-mok^{w}iʌwih *I looked after them*, tikiˑnamakiˑ-

[1] For Part I of this series see Practical Orthography for Matlapa Nahuatl, IJAL 17.32–36 (1951); Parts II and III are excerpted from a doctoral dissertation submitted in June, 1953, at Indiana University.

[2] Ibid.

ltia *we sell them to them*; amo akiN kikowas *nobody will buy it*, aki micʌanehtiˑs *who will lend it to you?*, amo aki noˑca *no one's talking*.

1.3. Morpheme final Vˑ and VˑN in phrase medial alternate respectively with V and VN in phrase final. We cite alternants showing this variation with the long vowel: naˑN, *mother* (noun base); this represents alternants naˑN and naN. Examples: naˑNʌi *mother*, teˑnaN *someone's mother*; nelwayoˑʌ *root*, monelwayo *your root*; ka seˑ ʌaˑkaʌ *with a man*, oNkah se *there's one*; mistoˑNcicin *little cats*, mistoN *it's a cat*; ikniˑNʌi *brother*, tinoiknin *you are my brother*. (The formula VˑN which appears in both **1.2** and **1.3** represents the end shapes of three alternants: čaˑN ∼ čaN ∼ čaˑ- *dwelling place* (noun base). Examples: čaˑNʌi *house*, ičaN *his house*, čaˑmeN *houses*.

1.4. Word final k in phrase final alternates with h in phrase medial. We cite alternants showing this variation with the stop: kamak *mouth* (noun base); this represents alternants kamak and kamah. Examples: nokamak *my mouth*, ikamah iwaˑN iyakacol *his mouth and nose*; amo tihneltokak *you didn't believe it*, tihneltokah ʌeN tikitak *you believed what you saw*.

2.1. Nahuatl prefixes are listed as follows by decade classes (10–70):

11. ni-	*first person singular actor*
12. ti- ∼ ∅- (zero)	*second person singular and first person plural actor*
13. aN-	*second person plural actor*
14. ši- ∼ ∅-	*imperative*
21. neˑč-	*first person singular goal*
31. mic-	*second person singular goal*
32. ki- ∼ -k- ∼ -h-	*third person singular goal*
33. teˑč-	*first person singular and plural goal*
34. aˑmeˑč- ∼ -meˑč-	*second person plural goal*
35. kiˑN-	*third person plural goal*
41. waˑl-	*from there to here*
42. oN-	*from here to there*
51. no-	*first person singular possessive*
52. mo-	*second person singular possessive*
53. i- ∼ iy- ∼ ∅-	*third person singular possessive*
54. to-	*first person plural possessive*
55. aˑmo-	*second person plural possessive*
56. iniˑN-	*third person plural possessive*
57. teˑ-	*indefinite possessive*
61. mo- ≈ m-	*reflexive*
62. teˑ-	*indefinite personal goal*
63. ʌa-	*indefinite impersonal goal*
71. Vh- ∼ CVh-	*intensifier and repetitive*

2.2. Nahuatl suffixes are listed below by century and decade classes: class 100 (110–190) consists of verbal and verbalizing suffixes; class 200 (210–250), nominal and nominalizing suffixes.

111. -ti	*verbalizer*
121. -li ≈ -ti ≈ -wi	*transitivizer*
122. -ti	*causative*
123. -lti ≈ -ˑlti	*compulsive*
131. -li ≈ -ˑli	*benefactive*
141. (-ti- ≈ -hti-) ∼ (-t- ≈ -ht-)	*second verb base marker (?)*
151. yah ∼ ya- ∼ yawi-	*go, efferentive*[3]
152. waˑlah ∼ waˑla- ∼ waˑlawi	*come, afferentive*[4]
153. weci ∼ wec-	*fall, inceptive*
154. nemi ∼ neN-	*walk, diffusive*
155. kiˑsa ∼ kiˑs-	*go out, promotive*
156. eˑwa ∼ eˑ-	*raise, premotive*
161. -a ∼ -wa	undetermined meaning
171. -to ≈ -hto	*progressive*
181. -ki	*action in intraverse direction, non-actualized*
182. -ko	*action in intraverse direction, actualized*
183. -ti	*action in extraverse direction, non-actualized*
184. -to	*action in extraverse direction, actualized*
185. -a ∼ -ya	*imperfective*

[3] Class 150 consists of intransitive verb bases distributed like suffixes and treated as such. Alternate shapes of these morphemes are dealt with in **5.**

[4] At first blush, 152 appears to consist of two morphemes: 41 and 151; the distribution, however, warrants the treatment of 152 as a single morpheme.

186. -h ≈ -k ≈ -hki ≈ -ki ≈ -hk- *perfective*
187. -s ≈ -'s *future*
188. -skia ≈ -'skia *conditional*
191. -kaN ≈ -ke'h ≈ -e'h ≈ -'h *verb pluralizer*
211. -niN *collective agentive*
212. -kaN ≈ -hkaN *locative*[5]
213. -ko ≈ -hko *locative*
214. -yaN *locative*
221. (-ke' ≈ -hke) ∼ (-ka' ≈ -hka') ∼ (-ka'h ≈ -hka'h) *agentive*
222. -l *participial*
223. -lis *nominalizer*
224. -yo' ≈ -hyo' ≈ -kayo' ≈ -hkayo' *abstractivizer and generalizer*
231. -o ∼ -yo *intimate possessive*
241. [(-li ≈ -liN) ∼ (-λi ≈ -iN) ∼ -λ] ≈ -# *absolute*
242. -meN ∼ -waN ∼ -ci- *noun pluralizer*
251. -ciN *diminutive*

3. In this and sections **4–6** which follow, the sequences cited do not constitute complete distributional statements. Each statement should be prefaced by the phrase "Where the distribution is possible . . ."; for the present we are dealing exclusively with the shapes of morphemes in observed distributions.[6]

3.1. Prefixes 12 and 14 each occur in two alternants: # - in sequence before prefix 33; ti- and ši- respectively in other positions. Examples: te'čahok^{w}i *you are looking after us*, te'čkaki *listen to me*!; time'hke'h *we got up*, šiki'sa *go out*!

3.2. Prefix 32 appears in three alternants: ki- in word initial and after prefix 13; elsewhere in word medial, -k- occurs before morpheme initial V, -h- before other morpheme initials. Examples: kiitato'h *they went to see her*, aNkico'Nteki'h *you (pl.) cut it*, tikahwa'ltia'h *we make him bark*, nihλahtoltih *I filled him with words*.

[5] Distinctive meaning is postulated for suffixes 212, 213, 214; however, the corresponding English translation for each so far ascertained is *place where*. . . .

[6] Morpheme distributions are dealt with in Part III of this series (forthcoming).

3.3. Prefix 34 occurs in two alternants: a'me'č- in word initial, -me'č- in word medial. Examples: a'me'čλamaka'h *they feed you (pl.)*, nime'čči'wiliti *I will go do it for you (pl.)*.

3.4. Prefix 53 is found in three alternants: #- before morpheme initial i, iy- before other morpheme initial V, i- elsewhere. Examples: istah *his salt*; iya'yohwaN *her calabashes*; tiita'h *you are his father*, ik^{w}awaN *his sticks*.

3.5. Prefix 61 occurs in two alternants: m- before certain morpheme initial V, mo- in other positions. Examples: time'hke'h *we got up*, mosiakecase'h *they will rest*.

3.6. Prefix 71 is reduplication of the first syllable of verb bases + h. Alternant Vh- appears before stem initial V; alternant CVh- before stem initial CV. Examples: niki'Nihita *I see them constantly*, k^{w}ahk^{w}alaNke'λ *grouch*. In a few instances, prefix 61 figures as C in the formula CVh-. Example: amihmihto'tiaya'h *you (pl.) were always dancing*.

3.7. Other prefixes are subject only to variations noted in **1.** Examples: te'na'Npico *mother pig*, nite'si'h *I am a grandmother*, te'osto'h *someone's cave*; aNkoNpi'kilia'h *you (pl.) go from here to wrap it over there*.

4.1. Suffix 121: -li ≈ -ti ≈ -wi. Examples: kičo'kilia *he cries for her*; tihte'mitihke'h *we filled it*; te'temowihkayo'λ *lowering people*.

4.2. Suffix 123: -lti ≈ -'lti. Examples: ne'či'to'naltia *it makes me sweat*, tihλak^{w}altihke'h *we fed him*; λaλehko'ltilisλi *what was raised*, λaweci'ltihkayo'λ *something made to fall*.

4.3. Suffix 131: -li ≈ -'li. Examples: te'čwa'li'kili *bring it to me*!, timicλacoconilia'h *we play it for you*; nihmati'lia *I found it out for him*, tihkaki'lihke'h *we heard it in her place*.

4.4. Suffix 141: (-ti- ≈ -hti-) ∼ (-t- ≈ -ht-); the first pair is found in sequence before base initial C (of class 150), the second pair before other base initials. Examples: kino'ctiwecke'h *they began to call*

him, čikiči·htiyah *he goes along making baskets*; tihmatite·hke·h *we found out about it before we left*, kʷatite·hki *he got tired before he went away*.

4.5. Suffix 161 is found in two alternants: -wa follows morpheme final o (see **5.7** for further variation of base final lo), -a follows other morpheme finals. Examples: ki·Nsa·-lowa *he adds them*, kiλapowaya·h *they were opening it*; tihči·wilia·h *we are making it for her*, niki·Nki·štiaya *I was taking them out*.

4.6. Suffix 171: -to ≈ -hto. Examples: mowawa·Ntok *he has been scratching*; ikwitoya *it was ripe*; nihλamihtos *I will be finishing it*; weckatoskia·h *they would be laughing*.

4.7. Suffix 185 is found in two alternants: -ya after morpheme final o and a; -a in other positions. Examples: šolonтoya·h *they were wet*; ne·čλapoliaya *he was opening it for me*; tiλakakia·h *we were hearing something*.

4.8. Suffix 186: -h ≈ -k ≈ -hki ≈ -ki ≈ -hk-. The first four of the series are found in word final; the first, second, and last of the series occur in word medial. Examples: nimose·wih *I sat down*; temo·k *she went down*; nihpohki *I read it*; kočki *he slept*; aNkipano·ke·h *you (pl.) passed him*; timose·-wihke·h *we sat down*; kipahpa·hke·h *they washed it*.

4.9. Suffix 187: -s ≈ -·s. Examples: kʷatitos *he will be tired*; niλailpi·s *I will tie something*.

4.10. Suffix 188: -skia ≈ -·skia. Examples: kočiskia *she would sleep*; nihλawiso·skia *I would throw it*.

4.11. Suffix 191: -kaN ≈ -ke·h ≈ -e·h ≈ -·h. The first of the series appears in sequence with prefix 14; the second after the first alternant of suffix 186; the third after the other two medial alternants of 186 and suffix 187; the last elsewhere. Examples: šihtekipano·ltikaN *make him work*! (pl. command); kiλaNkečihke·h *they bit him*; tiki·ke·h *we drank it*; ki·Npohpohke·h *they cleaned them*; ne·čne·štihtiki·sase·h *they will come out to find me*; te·čkalči·htoya·h *they have been making us a house*.

4.12. Suffix 212: -kaN ≈ -hkaN. Examples: λači·škaN *sight-seeing spot*; λakalakihkaN *place to put things*.

4.13. Suffix 213: -ko ≈ -hko. Examples: λano·cko *calling place*; λamela·hko *place to find things*.

4.14. Suffix 221: (-ke· ≈ -hke·) ~ (-ka· ≈ -hka·) ~ (-ka·h ≈ -hka·h). The second and third pairs occur in sequence with prefixes 50: the latter in word final; the former in word medial. The first pair appears elsewhere. Examples: te·kʷawila·Nke·λ *fighter*, λaλehko·ltihke·meN *lifters*; tocikʷi·-Nka·waN *our jumpers*, tiini·Nte·pahtihka·waN *we are their curers*; nimoλawi·katihka·h *I am your singer*, iλape·hka·h *his hunter*.

4.15. Suffix 224: -yo· ≈ -hyo· ≈ -kayo· ≈ -hkayo·. Examples: ahkiyo·λ *swimming*; nowe·ilisyo *my greatness*; ma·ltihyo·λ *bathing*; asikayo·meN arrivals.

4.16. Suffix 231 is found in two alternants: -yo after morpheme final V, -o after other morpheme finals. Examples: noeso *my own blood*; ihwiyowaN *its own feathers*.

4.17. Suffix 241: [(-li ≈ -liN) ~ (-λi ≈ -iN) ~ -λ] ≈ -*. The first pair is found after morpheme final l; the second pair after other morpheme final C; -λ after morpheme final V. -* is predictable only after suffixes 210. Examples: ka·walli *widow*, čapolliN *grasshopper*; teposλi *iron*, kayočiN *fox*; λiλ *fire*; čiči *dog*; a·košwal *turtle*; weckaniN *a laughing group*, λawa·cko *drying place*.

4.18. Suffix 242 is found in three alternants: -ci- before suffix 251; -waN in sequence with prefixes of class 50; -meN in other sequences. Examples: tepasolmeN *nests*, teλawi·katihke·meN *we are singers*; nokone·-waN *my children*, ini·Nomiyowan *their bones*; wiccin *little thorn*, moahkolciciN *your little arms*.

4.19. Other suffixes are subject only to variations noted in **1.** Examples: nikahokʷiti *I go to raise it*, tiki·Nčialtiti·h *we will make them go wait*, šičo·katotikaN *go be crying*! (pl. command); te·pahtiloyaN *place where people are cured*, kʷatekiya nihne·štia *I find the wood-cutting place*.

5.1. A number of base initial VC alternate with C: the latter found after prefix 63, the former in other occurrences. Examples: nikočpa·NKi *I swept it*, λačpa·NtoYa *she was sweeping*; ki·Nihk^{w}ilohtok *he has been writing them*, λahk^{w}ilohke·λ *writer*.

5.2. Certain base final Vwa ~ Vwi ~ V: the last of the series occurs before 141, 171, 186, 212 or 213, 221, 224 (hereafter we refer to this group of suffixes as S); the second before suffix 131; the first elsewhere. Examples: tihkowas *you will buy it*, ne·-čkowaltia *he forces me to buy*; te·čkowilia·h *they are buying it for us*; lala·škohtiyawi·h *they go away buying oranges*, tiλakohtoya·h *we had been buying things*, kalkohke·h *they bought houses*, k^{w}ašilokohkaN *place to buy bananas*, ičkakohke·λ *cotton buyer*, λakoh-kayo·λ *buying*; nihmela·wati *I go to meet him*, šiki·mela·wili *meet them for him*, te·mela·hko *place to meet people*.

5.3. Similarly, base final Vwi alternates with V: the latter occurs before S; the former elsewhere. Examples: λakiyawi *it is raining*, λakiyawiltihke·λ *rain-maker*, λaki-yahtiweci *it begins to rain suddenly*, λaki-yahtok *it has been raining*, miyah λakiyahki *it rained a lot*, λakiyahkaN *rainy place*, λakiyahkayo·λ *raining*.

5.4. Certain base final Vka alternate with Vki, the latter being found before suffix 131, the former elsewhere. Examples: kiwi·-kake·h *they took her along*, nimicwi·kili·s *I will carry it for you*. Other base final Vka ~ Vki ~ Vk ~ V and base final Vk^{w}a ~ Vk^{w}i ~ Vk ~ V: in each case the last of the series appears before suffixes 186, 212, 221, and 224; the third before 141 and 171; the second before suffix 131; the first in other occurrences. Examples: šihto·-kakaN *plant it*! (pl. command), tiki·Nto·-kilihke·h *we planted some things for them*, λato·ktineNke·h *they went all around planting*, moneki tihto·ktose·h *it will be necessary for us to be burying him*, ičkato·hki *he planted cotton*, λato·hkaN *field*, λato·hke·λ *planter*, λato·hkayo·λ *planting*; tihcak^{w}a·h *we close it*, aNte·čak^{w}ilihke·h *you (pl.) closed it for us*, ki·Ncaktiwa·la·s *he will come along closing them*, šihtencakto *keep your mouth closed*, kicahke·h *they closed it*, a·cahkaN *water valve*, a·cahke·λ *person who shuts off the water*, λacahkayo·λ *closing*.

5.5. Similarly, base final Vki and Vk^{w}i ~ Vk ~ V: the last of the series occurs before suffixes 186, 212, 221, and 224; the second before 122, 141, and 171; the first two in other positions. Examples: ki·Npa·ki·ltia *he amuses them*, kipa·ktih *she liked it*, mopa·-ktinemi·h *they go around pleasing one another*, tipa·ktoko·h *we came to have a good time*, nipa·hki *I was glad*, pa·hkaN *place of entertainment*, pa·hke·λ *happy person*, pa·hkayo·λ *gladness*; nipanihnek^{w}i *I smell bread*, ke·-soihnekte·hki *he smelled cheese before he left*, šo·čiihnektoya·h *they had been smelling flowers*, tiki·Nihnehke·h *we smelled them*, λahnehkaN *smelly place*, λahnehke·λ *smeller*, λahnehkayo·λ *smelling*.

5.6. Base final nasal + a (Na) ~ Ni ~ N: the last of the series is found before S; the second before suffix 131; the first elsewhere. Examples: iyačiči·na·h *they smoke tobacco*, λačiči·nalli *what was smoked*, nihčiči·nili·s *I will smoke it for him*, tiλačiči·Ntinemise·h *he will go around smoking*, kičiči·Ntoskia *he would be smoking it*, wa·lλačiči·Nke·h *they came from over there to smoke here*, λačiči·Nko *place to smoke*, λačiči·Nke·λ *smoker*, λačiči·Nkayo·λ *smoking*; λahcoma *she is sewing*, te·čihcomilia *she sews it for us*, λahcoNkaN *sewing place*. Similarly, base final Ni alternates with N: the latter before S, the former elsewhere. Examples: nehnemi·h *they are walking*, te·čnehnemiltih *he made us walk*, šinehnentiyah *go walking*!, nehneNko *walking place*, yowalnehneNke·λ *night-watchman* (*person who walks about at night*), nehneNkayo·λ *walking*.

5.7. Base final lo alternates with lwi: the latter is found before suffix 131, the former in other positions. Examples: niλahk^{w}iloko *I came to write*, λahk^{w}ilolli *what is written*, timicλak^{w}ilwilihke·h *we wrote it for you*; tiki·Nsa·lowaya *you were adding them*, nihsa·-lwili·s *I will add it for him*.

5.8. Certain base final ti alternate with t: the latter appears before suffixes 186 and 221, the former elsewhere. Examples: kʷatia *he was getting tired*, tikʷatitos *you will be tired*, ikšikʷatkeʻh *their feet got tired*, kʷatkeʻλ *person always tired*. One base final ti alternates further with či, the latter found only before suffix 123. Examples: kimati *he knows it*, teʻčmačiʻltiaʻh *they compel us to learn*.

5.9. Base final Va and Vi alternate with V·š: the latter is found before S, the former two elsewhere. Examples: teʻččiaʻh *they are waiting for us*, neʻčiʻšteʻhki *he waited for me before he went away*, kičiʻštos *she will be waiting for him*, tikiʻnčiʻškeʻh *we waited for them*, teʻčiʻškeʻλ *guide (person who waits for others)*, teʻčiʻškan *waiting room*; weʻiaya *it was growing*, weʻiʻštiweci *it begins to grow suddenly*, weʻiʻštoseʻh *they will be growing*, anweʻiʻškeʻh *you (pl.) grew up*, weʻiʻškeʻmen *adults*, weʻiʻškayoʻλ *growth*, weʻiʻškan *fertile field (growing place)*.

5.10. Two base final ah ∼ a ∼ awi: the first of the series is found in word final; the second before S, 185, and (191, excluding words in which prefix 14 appears); the third elsewhere. Examples: niyah *I am going*, waʻlahtoyaʻh *they were coming*, tiyawiaʻh *we were going*, šiwaʻlakan *come on!*, yaʻs *he will go*.

5.11. A number of base final Ca and Ci have been noted with various alternants in **5.2–10**. An additional number of base final Ca and Ci alternate with C, the latter occurring usually before S, and the former two in other positions. (However, a few show further base final variations which will be indicated below). Examples: koči·h *they are sleeping*, tikočtikiʻsaʻh *we go to sleep immediately*, kočtokeʻh *they were asleep*, niwaʻlkočki *I came to sleep*, kočkan *sleeping room*, kočkeʻλ *sleepy-head*, kočkayoʻλ *sleep*. One base final si ∼ ši ∼ s, the second of the series appearing only before suffix 123. Examples: tiλaλasiayaʻh *we were coughing*, neʻčλaλašiʻltia *it makes me cough*, tiλaλastoya *you had been coughing*. One base final ca ∼ či ∼ c, the second of the series occurring only before suffix 131. Examples: nimicnohnoʻca *I am talking to you*, tikiʻnohnoʻčiliaʻh *we were talking to them in his place*, kinoʻctiweciaʻh *they were beginning to call him*. One base final sa ∼ š ∼ s: one base final si ∼ š ∼ s: in each case the second of the series appears only before suffix 122. Examples: šikiʻsa *come out!*, šihkiʻšti *bring it out!*, kiʻskan *exit*; neʻsi *it comes in view*, nihneʻštih *I found it*, neʻski *he appeared*.

5.12. Other verb bases are subject only to variations noted in **1**. Examples: λakʷa *he is eating*, kikʷahki *he ate it*, tihλakʷaltiaʻh *we fed him*, λakʷaʻlisλi *something to eat*, teʻkʷahkeʻλ *cannibal*; šipano *come in!*, tihpanoʻs *you will pass him*, panoʻtiyahki *he went along passing*, nikiʻnpanoʻk *I passed them*.

6.1. Some base final h in word medial alternate with hwi in word final. Examples: pahmen *medicines*, nopahwi *my medicine*; ohλi *road*, toohwi *our road*.

6.2. Some base final mi before suffix 241 alternate with n in other positions (subject to variations noted in **1.2–3**). Examples: λakeʻmiλ *bed cover*, aʻmoλakeʻnwan *your (pl.) covers*, teʻλaken *somebody's cover*, λakeʻmen *bed covers*. Other base final mi show variations noted in **6.6**.

6.3. One base appears in alternants maʻi- ∼ maʻ- ∼ maʻš: the first alternant is found before suffix 241; the second before noun and verb bases; the third in other positions. Examples: maʻiλ *hand*, maʻsoločλi *wrinkles on the hand*, nihmaʻlakanah *I dropped it*, iniʻmaʻšwan *their hands*, momaʻš *your hand*. Elsewhere, base final Vi before suffix 241 alternates with either Vš or Vs in other positions. Examples: kʷeiʻλ *underskirt*, ikʷeš *her underskirt*, kʷešλahcomalli *underskirt seam*; cihwaiλ *comb*, nocihwas *my comb*, cihwasλankočmen *teeth of a comb*.

6.4. One base appears in alternants kʷawi- ∼ kʷah ∼ kʷa-: the first alternant is found before suffix 241; the second in word final; the third elsewhere. Examples: kʷawiλ

tree, stick, ikʷah *his stick*, kikʷawiyonihkeʻh *they hanged her*, kʷacicɪɴ *little trees*.

6.5. Base final λa in word medial alternates with λ in word final. Examples: meλaλ *metate*, meλapilmaʻiλ *metate mano*, imeλ *her metate*.

6.6. Base final V has been noted with various alternants in **6.2–5**. Most base final V in word medial alternate with Vh in word final. Examples: aškaλ *property*, iniʻnaškah *their property*; siwaʻmeɴ *females*, šiwaʻlnosiwaʻh *come be my wife*!

6.7. Other noun bases are subject only to variations noted in **1**. Examples: ikšiλ *foot*, ikši *his foot*; mičiɴ *fish*, mičnakaλ *fish meat*, mowicmič *your bony fish*, ihiyoʻλ *breath*, ihiyo *her breath*.

SENECA III*

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5. Points of grammar; nouns
6. Attributive qualifiers
7. Numerals
8. Pronouns

5.1. Although the noun shows a definite tendency to function as a verb, we may conveniently speak of a nominal and a verbal inflection. The Seneca noun may or may not be preceded by a classificatory prefix; instances of the former type are: cite?ǫ *bird*, kwa?yo? *rabbit*, senǫh *skunk*, skwaak *frog*, tyihokwaes *chipmunk*, tyinǫthaiyǫ *mouse*, tyiyah *dog*, nyakwai? *bear* (hence chiefly animal names). Nouns of the latter type fall into different classes according to their gender and primitive initial. The Iroquoian languages generally possess three genders in the singular and two in the dual and plural; the three singular genders are: the masculine, the non-masculine, and the common (or feminine) gender.

The masculine gender chiefly comprises designations for male beings: hǫkweh *man, Indian*, haksa?a *boy*, hahsęnowaneh *chief*, hakowaneh *chief*, hakǫtes *long-nosed one*, hanyǫ? *white man*; the non-masculine gender comprises designations for females (in less respectful reference), some animals, things, and ideas: kahai *witch* (but hatihai *male witches*, masc. plur.), kahoskwa *horndace* (fish), kanyoo? *wild animal*, kashenęt *tame* or *domestic animal*, kacitatyi *blackbird*; cf. cite?ǫ *bird*), kacinah *male animal* (but hacinah *man*), kaya?takes *goat*, keǫ *female animal* (cf. yeǫ *female person, woman*), kaęnǫ? *song*, kaiwa *word*, kakǫhsa? *mask*, kanǫhsot *house*, kanyǫ?khaa? *white people's language* (cf. hanyǫ? *white man*), kawęnǫ? *language*), kaya?ta? *doll*, kaya?ta?a *picture*, kæhkwaa? *sun*, kęcoh *fish*, keǫkæ? *elm tree*, keǫya(te?) *sky*.

The common (or feminine) gender comprises words denoting women in respectful reference: e.g., yeksa?a *girl* (but kaksa? *baby*, non-masc.), yeksakowa *pretty woman*, yeksa?atiyo *good girl*, yenyǫ? *white girl* (cf. hanyǫ? *white man*), yeǫ *female, woman* (cf. above), yakǫkweh *woman*.[1]—The common (feminine) gender originally had no special plural form; to express plurality, the non-masculine form is used: watiksa?ashǫ? *little girls* (from yeksa?), watiksakowa *pretty women* (from yeksakowa), węnǫkwe?ǫweh *Indian ladies* (from yakǫkweh *woman*).[2]

5.2. Most nouns with prefixes may be verbalized: haksa? *boy* may also mean *he is a boy*, yeksa? *girl* can also mean *she is a girl*, and kaksa? *baby* can mean *it is a baby*. They may consequently be conjugated: keksa? *I am a boy* or *a girl*, seksa?akowa *you are a handsome man* or *a*

* Seneca I, IJAL 15.23–44 (1949); Seneca II, IJAL 18.217–22 (1952).

[1] Originally, the common gender may have expressed the idea of *people, the community* (yakǫkweh *woman* is therefore properly *member of the community*). In the verbal inflection these prefixes still mean *people*, but in the nouns there are only traces of this function: yehotǫkwatha? *key*, yeya?-tǫ?kwa? *pencil*, yeskewakta? (yiskewakta? ?) *broom*, yǫtaǫtyohkwa? *fish rod*, which literally mean *people-close-*(or *lock-*)*instrument*, *people-picture-make-instrument*, *people-sweep-instrument*, and *people-fish-instrument*, respectively; of the same type are yækhkwihsakta? *watch* and t-yekhǫ-nyatha? *kitchen* (literally *where people prepare for eating*). All are consequently verbal in their origin.

[2] From the point of view of noun declension, this form may be considered as the plural of feminine words, since non-masculine words usually do not take these prefixes in the plural, but are formed with a singular prefix and a suffix expressing plurality: kanǫhsotǫ? *houses* (from kanǫhsot), onǫ?kæ?shǫ? *horns* (from onǫ?kae? *horn*). In the verbal inflection, however, the aforesaid plural prefixes are used of non-masculine nouns as well.

pretty girl, twaksa?ashǫ?, akwaksa?ashǫ? *we all are boys*, etc.; also te?kækwaa? soękha *there is no moon* (negative form). Verbalization is particularly characteristic in words of relationship: heyate? *my grandson* (literally *I have him for a grandson*; cf. heya-thǫte? *I listen to him*), he-awak *my son* (literally *I have him for a son*; cf. henoǫkhwa? *I like him*),[3] khe-kęhcih *my old woman*, *my wife* (literally *I have her for a wife*; cf. khe-noęs *I like her*), etc. The following is a list of some important words of relationship, of which certain inflections were noted down (notice that the prefixes

	Class I	Class II	Class III	Class IV	Class V
Sing. masc.	ha-	ha-		hę-	ho-[5]
Sing. non-masc.	a- wa-	ka-	e-	kę- wi-	yo-
Common	yǫ-	ye-		ye-	yako-[5]
Dual masc.	ya-	(te)ni-[6]			
Dual non-masc.	kya-				
Plur. masc.	hǫnǫ-	hati-			hęno-[5]
Plur. non-masc.	ǫnǫ-	ǫti- wati-			węno-[5]

are different from the ordinary possessive prefixes given in sections **5.8** and **5.9**): ha-hci? *my elder brother*, ya-hci? *your* (sing.) *elder brother*, ho-hci? *his elder brother*, a-hci? *my elder sister*,[4] sa-hci? *your elder sister*; ha-?nih *my father*, ya-?nih *your* (sing.) *father*, ho-?nih *his father*; hak-sot *my grandfather*, ya-hsot *your* (sing.) *grandfather*, ak-sot *my grandmother*; he-awak *my son*, hesh-awak *your* (sing.) *son*, hesny-awak *your* (dual) *son*, hesw-awak *your* (plur.) *son*, sety-awak *our son*, shesny-awak *their son*, ethy-awak *our daughter*, echy-awak *their daughter*.

Among the expressions of relationship notice the following type, in which the verbalization is unmistakable: tesnyatęnǫte? *your brother*, teswatęnǫte? *your brothers*, teyakyatęnǫte? *my brother*, teyatęnǫte? *his* or *her brother*; these can only be analyzed as *you two are brothers together*, *you* (*many are brothers together*, and *they two* (masc.) *are brothers* or *brother and sister together*, respectively. Similarly the following paradigm: ǫkyateo *my friend*, cateo *your* (sing.) *friend*, hǫnǫteo *his friends*, ǫnǫteo *her friends*, ǫkwateo *our friend*(*s*), swateo *your* (*plur friend*(*s*) (literally: *we two are friends*, *you two are friends*, *they* (masc. and fem.) *are friends*, *we are friends*, and *you are friends*, respectively). In the same way we find cǫkweta? *your relation* (literally *you two are relations*), teyakyati *my wife* (literally *we two are sitting together*), yate?kę *brother and sister*, yatatate? *grandfather and grandson*, kyatathawak *mother and daughter*, hęnǫtathawakshǫ? *father and mother and son* (in the last example, *mother* is not expressed, but is implied in the plural form hęnǫ-; the corresponding masc. dual form yatathawak would mean either *father and son* or *mother and son* or *father and daughter*).

[3] Notice that these constructions are sometimes ambiguous: i heawak means *I am his son*, while heawak = *my son*, i.e., *he is my son*.—While the latter form may be analyzed as *I have him for a son*, such a form as hak-sot *my grandfather* would seem to be *he is a grandfather to me* or *he grandfathers me* (cf. hak-noęs *he likes me*).

[4] Notice that nominal stems are in themselves indeterminate as to gender, which is solely expressed by the different prefixes: haksa? *boy*, yeksa? *girl*, *woman*, in which the stem -ksa? rather expresses *child* or *young person* than *boy* or *girl*; similarly the Seneca -hsot expresses *grandparent*.

[5] This prefix was only found in the nasalized form: hǫ-, yakǫ-, hęnǫ-, węnǫ-.

[6] In this prefix, te- marks the dual (see section **5.6**).

5.3. The nouns with prefixes (see **5.1**) belong to five distinct classes[7] according to the table on page 282.

Examples: Class I: hateceᵩs *medicine man*, aate? *road* (for a-aate?; three a's could not be distinguished), wakayǫh *old thing*, yǫtaǫtyohkwa? *fish rod*, yate?kᵩ *brother and sister* (cf. above), hǫnǫteceᵩs *medicine men*; Class II: haksa?a *boy*, kaksa? *baby*, yeksa? *girl*, teniksa?a *two boys* (or *they are two boys*), hatiksa?ashǫ? *boys*, watiksa?ashǫ? *girls*; Class III: e?niskæ? *wheel*; Class IV: kᵩcoh *fish*, wiyo (*something*) *good*; Class V: hǫkweh *man*, *Indian*, yoᵩca? *or* yoᵩcate? *earth*, yakǫkweh *Indian woman*, hᵩnǫkwehshǫ? *Indians*, wᵩnǫkwehshǫ? *Indian women*.[8]—Owing to the scantiness of the material, all forms could not be obtained. Neither was it possible in every case to ascertain whether the prefix was purely nominal or verbal; it is likely that in cases where two prefixes were recorded, one of them properly belongs to verbalized construction (cf. **5.1**, beginning).

5.4. Of certain nouns an alternative set of prefixes is found (evidently corresponding to the objective prefixes of the verb). These impart to the noun a slightly different meaning (see the examples); the table given below is very incomplete:

	Class I	Class II	Class III	Class IV	Class V
Sing. masc.		ho-		hawᵩ-	
Sing. non-masc.	o-	o-		awᵩ-	
Common		ko-		kawᵩ-	

Examples: Class I: oaate? *road* (cf. aate?, idem); Class II: honekeah *drunk* (cf. honekeᵩ? *he is drunk*), o?nehsa? *sand* (cf. ka?nehsa? *nannyberry*, name of a bush, probably *Viburnum lentago*, ka?nehsa?keh *on the beach*), oᵩnǫ? *song* (cf. kaᵩnǫ?, *idem*), oiwa *news* (cf. kaiwa *word*), kotyanon *cute little girl* (cf. hotyanon *cute little boy*); Class IV: hawᵩyǫh *dead man* (cf. hᵩyǫs *he is dying*), awᵩyǫh *dead animal*, kawᵩyǫh *dead woman* (in verbalized forms final -? was noted: hawᵩyǫ? *he is dead*; cf. honekeah and honekeᵩ?, above).

5.5. A vocative is formed by addition of a final -h: nohyᵩh *mother* (cf. sano?ᵩ? *your mother*).

5.6. Dual and plural forms. These are characterized partly by the singular, dual, and plural prefixes given in section **5.3**—nouns denoting persons regularly take the plural (or dual) prefixes when the plural suffix is added: hatiksa?ashǫ? *boys* (from haksa?a), but other masculine nouns do not: ha?nowashǫ? *turtles* (from ha?nowa)—partly by various kinds of suffixes (see below); the dual generally takes the prefix te- or t- before the class prefix and can then function without any suffix: teniksa?a *two boys*, tekni tekait *two trees*. The following plural suffixes were found: -shǫ?, -ǫ?, -nyǫ?, -onǫ?, -nǫke?, and -ke.

Examples of -shǫ?. Most nouns (of the prefix category as well as of the prefixless category; see **5.1**)[9] form their plural by addition of -shǫ?: cite?ǫshǫ? *birds* (from cite?ǫ), tyiyahshǫ? *dogs* (from tyiyah), hatiksa?ashǫ? *boys* (from haksa?a), haticinahshǫ? *the men*, watiksa?asho? *girls* (from yeksa?a; cf. section **5.1**, end), kanyoo?shǫ? *wild animals* (from kanyoo?), aweᵩshǫ? *flowers* (from aweᵩ), okaa?shǫ? *both eyes*

[7] The prefixes are the same as in the subjective conjugation of the verb. The five classes are typical of all Iroquoian languages (cf. C. M. Barbeau, Classification of Iroquoian radicals with subjective pronominal prefixes, in Canadian Department of Mines, Memoir 46; Ottawa, 1915) and Floyd Lounsbury.

[8] Notice that in certain nouns contractions have taken place, which change the appearance of the prefix: kæhkwaa? *sun* (cf. Mohawk karahkwa?; see Seneca II, **4.1**), kæha? *wind* (of the 2d class), and ᵩhoshæ? *ball* (probably of the 1st class).

[9] Even in the prefixless type of nouns, a prefix is sometimes used in the plural form: otyinǫthaiyǫshǫ? *mice* (from tyinǫthaiyǫ *mouse*).

(from okaa?); notice kaskwæ?shǫ? *stones* (Ch) from kaskwaa? *stone* (EC).

Examples of -ǫ?. This suffix is often used with nouns ending in -t (it is originally verbal; cf. Seneca II, **4.2**): kanǫhsotǫ? *houses* (from kanǫhsot), kaitǫ? *trees* (from kait).

Examples of -nyǫ?: onǫtate?nyǫ? *mountain chain* (from onǫtate? *mountain*), kahǫtanyǫ? *rivers* (from kahǫte?), kanyotae?nyǫ? *lakes* (from kanyotae? *lake*), kacihsǫ?taonyǫ? *stars* (cf. kacihsǫ?ta or ocihsǫ?tao *star*).

Examples of -onǫ?. This suffix is chiefly used to express members of a nation, etc.: thanawǫteonǫ? *Indians of Tonawanda* (thanawǫte?), tohsoweonǫ? *Buffalonians* (from tohsowæ? *Buffalo*), swikeonǫ? *Canadians*, ohiyonǫ? *Indians of Alleghany Reservation* (which is called ohiyo 'the great river' in Seneca);[10] katækeshǫnǫ? *Catraugusans* (cf. katækeskeǫ *Cataraugus Reservation*) seems to contain a combination of -shǫ? and -onǫ? (?).

Example of -nǫke?: kashe?tanǫke? *flies* (from oshe?ta?a *a fly*).

Examples of -ke. This suffix is used especially in time expressions of the type: twęnitake *two months* (t- is the sign of the dual; see above), sę niwęnitake *three months* (from swęnitat *one month*), twęnishake *two days*, sę niwęnishake *three days* (cf. swęnishæt *one day*, węnishate? *day*), sę niyoshake *three years* (cf. t(e)yoshæt *one year*); similarly tekawistake *two dollars*, sę nikawistake *three dollars* (cf. kawistat *dollar*).

The English plural suffix -s seems to have crept into the language as an occasional formative: kahiyos *good creeks* (from kahiyo; Ch), sęniyǫ hatihsęnowanes *three chiefs* (from hahsęnowaneh *chief*; EC).

[10] We might consider -onǫ? as a collective suffix. A true collective suffix is apparently -yę?, in kanǫtayę? *the city* (literally *the group of villages* or *habitations*), kahatayę? *wood* (*lots of timber*).— Another similar, but variously used, suffix is -khaa?, in onǫtawakhaa? *Seneca nation* and *language*; it is also used in the phrases onǫtawakhaa? ǫkwe?ǫweh *Seneca Indian* and onǫtawakhaa? kawęnǫ? *Seneca language*.

5.7. Nouns are often preceded by an element ne? (ne?-, ne-, n-), which seems analogous to the definite article in many other languages: ne-haksa?a *the boy* (for the disappearance of the glottal stop before h-, see Seneca II, **3.9**), ne-hǫkweh *the man*, ne?-miol *the mule* (Mrs. Cl), ne?-aska *Oscar*, n-ǫkwe?ǫweh *the Indian*. Usually, this element forms with the following noun a stress unit (carrying the accent on the second syllable from the beginning, according to the rule in Seneca II, **3.6**) and consequently ought to be written in one word.

5.8. Possessive inflection. A pronominal owner in the possessive construction is, as a rule, expressed by prefixes (for another way of expressing a pronominal owner, see **8.3**). These prefixes are clearly related to the objective prefixes of the verb; we consequently find that the possessive prefixes, like those mentioned in section **5.3**, occur in sets corresponding to the five classes of nominal stems (**5.3**). There are two types of possessive prefixes (which, however, largely coincide); the first type (A) is used when the noun is not followed by a postposition (see **5.10**), the second type (B), when a postposition follows. The forms of the prefixes are seen in the tables on page 285.

Examples: Class I: saǫta? *your* (sing.) *ear*, ǫkwathwaishæ? *our soul* (-shæ? is a common nominal suffix), hǫnǫthwais *their soul*; Class II: akekhwa? *my food*, aketkwęhsa? *my blood*, aknǫhsot *my house*, saęnǫ? *your song*, sya?ta?a *a picture of you*, hokhwa? *his food*, hotkwęhsa? *his blood*, tyoskwaon o?nęyashǫ? *cow skeleton* (*cow, its bones*), kokhwa? *her food*, ko?nikoę *her mind*, ǫkninǫhsot *our* (dual) *house*, ǫkwatkwęhsa? *our blood*, hotikwęhsa? *their* (masc.) *blood*; Class III: akenyahsa? *my heart*, sanyahsa? *your* (sing.) *heart*, hawęnyahsa? *his heart*, kawęnyahsa? *her heart*; Class V: akoęcate? *my land*, hǫnoęcate? *their* (masc.) *land*.— Notice that the form is unchanged whatever the gender of the noun expressing that which is owned: akeksa?ta? *my boy* or *my girl* (that is, either from haksa? or yeksa?; see

Prefixes of type (A):

Owner	Class I	Class II	Class III	Class IV	Class V
1st sing.	aka-	ake- ak-	ake-	aki-	ako-
2d sing.	sa-	sa- (s-)	sa-	sa-	
3d sing. masc.	ho-	ho-	hawę-		
3d sing. non-masc.			awę-		
Common	ko-	ko-	kawę-		
1st dual		ǫkni-			
2d dual		sni-			
1st plur.	ǫkwa-	ǫkwa-		ǫkwę-	
2d plur.		swa-			co-[6]
3d plur. masc.	hǫnǫ-	hoti-		hǫno-	
3d plur. non-masc.		oti-[11]			

5.3); neither does the possessive form differ of nouns having objective prefixes (see **5.4**). Also notice forms depending on contraction of prefix and stem, such as akæhkwa? *my bread*, hoæhkwa? *his bread*, koæhkwa? *her bread* (from æhkwa? *bread*); akęhoshæ? *my ball* (from ęhoshæ?; see **5.3**, note 8); from e?niskæ? *wheel* (which evidently belongs to class III) Mrs. Wh formed sa?niskæ? *your wheel*, ho?niskæ? *his wheel*, ko?niskæ? *her wheel* (as if of class II). Sometimes, though comparatively seldom, nouns of the prefixless type (**5.1**) occur with possessive prefixes (of class II): aketyiyah *my dog*, satyiyah *your dog* (from tyiyah *dog*).

5.9. When the noun is construed with a postposition (see **5.10**), certain other forms of the possessive prefixes are used, according to the table below:[12]

Owner	Class I	Class II	Class III	Class IV	ClassV
1st sing.	ka-	ke- k-		ki-	
2d sing.	sa-	se- s-		si-	

[11] After te-, t- (in verbalized construction; cf. **5.2**), oti- appears as -yoti-: tyotinǫhsot *that* (literally *there*) *is their house*; also cf. nyotiyanǫwe?ǫh *what they tried to do*.

[12] The table is very incomplete; the forms obtained diverge from the forms given in **5.8** only in the first and second persons singular.

Examples: Class I: kaǫta?keh *in my ear*, saǫta?keh *in your ear* (from oǫta? *ear*, objective form; see **5.4**); Class II: kekaa?keh *in my eye* (from okaa? *eye*), knikoękeh *on my mind* (cf. aknikoę *my mind*), sekaa?keh *in your eye*, sno?cakeh *on your tooth* (or *teeth*; from ono?ca *tooth*, *teeth*, objective form, see **5.4**). Sometimes incorrect forms were given: aknǫhsa?keh (Ch) for knǫhsa?keh *in my house*, akoęca?keh (Ch) for koęca?keh *on my land*, akaǫta?keh (O) for kaǫta?keh (see above).—Nouns inflected either according to **5.8** or **5.9** may show certain irregularities (apart from those depending on contraction; see **5.8**). Thus, of kakǫhsa? *mask* (class II), the first person singular is formed according to class IV akikǫhsa? *my mask*; similarly, of okǫta? *nose*: sikǫta?keh *on* (or *in*) *your nose*. For the verbalized possessive forms of the type heyate? *my grandson*, see section **5.2**; also such forms as kyasǫh *my name*, syasǫh *your name*, hayasǫh *his name*, yeyasǫh *her name*, akwayasǫh *our names* appear with verbal prefixes and may therefore be under-

stood as *I am named*, etc. Certain nouns are increased with a special element in the possessive form (cf. Siouan and Algonquian): akeksa?ta? *my child* (cf. haksa? *boy*, yeksa? *girl*), is cǫkweta? *your relation* (cf. hǫkweh *man*, yakǫkweh *woman*). When the owner is a noun, the construction is the following: cite?ǫ ohǫ?sa *bird, its egg*, i.e., *bird's egg*, tyoskwaon o?nęyashǫ? *cow, its bones*, i.e., *cow skeleton* (cf. **5.8**).

5.10. Postpositions. Seneca makes use of a great number of postpositions, of which the most common are: -(ǫ)k, -k?a, -keh, -(a)kǫ, -neh, -okę, -ǫkeh, -tih.

Example of -(ǫ)k: kahǫk *to the river*.[13]

Examples of -k?a: kanǫhsa-k?a *near the house*, kahsitak?a *right to my foot*.

Examples of -keh. This is perhaps the most common postposition, which expresses *in, on, at*: kanǫhsa?keh *in* or *on the house*, kekaa?keh *in my eyes*, askwa?ke(h)shǫ *just on the bridge*, aa?ke(h)shǫ *along the road* (-shǫ being an equivalent of *just*).

Examples of -(a)kǫ. This postposition often expresses *under*: kanǫhsakǫ *under the house*, kanǫ?cakǫ *under the pot*, but also *in*: kaętakǫ *in the garden*, kahatakǫshǫ? *in the forest* (in the last examples, perhaps in the sense of *under among the plants, the trees* ?); notice the place of the plural suffix (-shǫ?; see **5.6**) after the postposition.

Examples of -neh. This postposition, which means *near* or *at*, was recorded in several place names and analogous expressions: haksa?aneh *at the boy's house*, kahaineh *witch place*, ohsehtakǫneh *in the willows*, in which it is combined with -(a)kǫ *under, in, under among* (see above).

Example of -okę. Added to a dual form (see **5.6**) of the noun, this postposition expresses between: tekanǫhsokę *between the two houses*.

Examples of -ǫkeh. This postposition has approximately the same meaning as -keh (see above): kawenǫkeh *on the island* (from kawenot *island*), kehsinǫkeh *on my leg*, sehsinǫkeh *on your leg* (from ohsina *the whole leg*, objective form).

Examples of -tih: tyonyatih *back of the flat* (place name; cf. yonya *isthmus*, O). With the form in s- (see **7.3**, note 17) of the noun, -tih means *beyond*: skanyotaetih *over the lake*; notice the form skanyotaetihkowa *Europe* (literally *beyond the big sea*), in which the postposition is followed by augmentative -kowa (*great, big*).

6.1. The Seneca 'adjective' is often not distinguishable from a noun or a verb; compare, for instance, kanyoo? *wild animal* and *wild* (e.g., o?son kanyoo? *wild turkey*), thaiwai *good, earnest* or *he is good, earnest*, tyeiwai (*she is*) *good, earnest*, thatiiwai (*they are*) *good, earnest*.

6.2. The following suffixes qualify nouns in much the same way as an attributive adjective in English: -a *little* (diminutive suffix),[14] -(a)se *new, young*, -es *long, high*, -etkę? *bad*, -i, -it *full*, -iyo *fine, good, beautiful*,[15] -kayǫh *old*, -kę *white*, -kowa *great, fine*,[15] -nekwat *dear*, -no *cold*, -noǫ? *dear*, -sa?tyon *ugly*, -steę? *big*, -?taiyę *hot*, -tki? *dirty*, -tyi *black*, -waneh *great, big*. Examples: haksa?a *little boy*, yeksa?a *little girl* (cf. yeksa? *grown-up girl, woman*), kanǫhsase *new house*, oneǫse *new corn*, kanǫhses *long house*, hakǫtes *long-nosed one*, onǫtes *high mountain*, haksataetkę? *bad boy*, kanǫ?ci onǫkwa? *a pail full* (or *pailful*) *of milk* (but onekanos kanǫ?caee? means *pail of water*), okanǫ?cit *full pail*, kahiyo *good creek*, kanǫhsakayǫh *old house*, oneǫkę *white corn*, haksa?kowa *fine* (*young*) *man*, yeksa?-kowa *pretty woman*, yeksa?akowa *pretty girl*, onǫhsanekwat *expensive house* (cf. **6.4**),

[13] Direction is not implied in the Seneca postpositions; the same phrase can also mean *at the river*.

[14] It is freely used to express *little, small*; other diminutive suffixes (used restrictedly) are -ǫ? (onekǫ? *little puddle*; cf. oneka- *water*, hacinǫ? (kacinǫ?) *male*, from hacinah *man*), -sa? (ohǫsa? *egg*; = ohǫ?a) or -s?a (cf. footnote 16).

[15] Originally this termination equaled *great*, as still in the place name ohiyo *Alleghany Reservation* (or *the Alleghany river*, which is now referred to as ohiyo kahǫte?); cf. Ontario (= *the great lake*), from some other Iroquoian language. Also -kowa originally meant *great*; now it mostly means *fine* (cf. Seneca II, **5.3**).

ohsǫtano *cold night*, kanekanoǫ? *high-priced whiskey* (cf. **6.4**), onǫhsasa?tyon *ugly house* (cf. **6.4**), kaętasteę? *big garden*, oneka?taiyę *hot water*, onǫhsatki? *dirty house* (cf. **6.4**), kanǫhsatyi *dark house*, kanǫhsawaneh *or* kanohsowaneh (the latter form was said to occur as a place name) *big house*, hahsęnowaneh *chief* (literally *great name*, cf. kahsęnǫ? *name*).

6.3. Certain nouns are slightly modified when construed with an attributive suffix. As seen from the examples in the preceding section, the element -ta- or -t- is often intercalated between the noun and the suffix: hatiksatiyo *good boys* (from haksa?), hǫkwe?tase *young man*, hokwę?tiyo (EC), hǫkwetiyo (Mrs. Cl) *nice man* (from hǫkweh). Conversely, certain nouns drop a dental suffix before the qualifying suffix: kahwaneh *big river* (from kahǫte? *river*), onǫtes (see **6.2**; from onǫtate? or onǫtot *mountain*), kanǫhseskeh (*at*) *the longhouse* (cf. kanǫhsot *house*). The form is altered also in kacitake *white bird* and kacitatyi *blackbird* (from cite?ǫ *bird*) and onekanos (*fresh*) *water* appears in the older form oneka- (see Seneca II, **4.2**): onekano *cold water*.

6.4. As mentioned in section **5.4**, many nouns are construed with an objective prefix, which sometimes changes or modifies its meaning. It should be noticed that some of the qualifying suffixes enumerated in **6.2** always require the subjective form of the noun and others the objective form, which then do not change the meaning of the noun qualified by the suffix. Thus, for instance, -noǫ? *dear* requires the subjective form; hence, oneka? *strong drink* combines with the suffix into kanekanoǫ? *high-priced whiskey* (see **6.2**). The suffixes -nekwat, -sa?tyon, and -tki?, on the other hand, always take the objective form: onǫhsanekwat *expensive house*, onǫhsasa?tyon *ugly house*, onǫhsatki? *dirty house* (from kanǫhsot, kanǫhsa?).

6.5. The qualifiers mentioned in **6.2** may also occur as independent words and take the prefixes mentioned in **5.3** and **5.4**: hakayǫh *old* (*man*), wakayǫh *something old, old thing*, hakwaneh (masc.), yekwaneh (common) *big* (cf. -waneh in **6.2**), kanoǫ? *something dear*, wiyo *something good*.

6.6. The element -a *little*, whether construed independently or as a suffix, and some other qualifiers (chiefly those which have a diminutive sense),[16] take the prefix ni- (see **7.2–7.8**) before the classificatory prefix: niwa?a *small* or *it is small*, niwa?a kaya?ta?a *small picture*, nikacita?a *little bird* (cf. **6.3**), nikatyiya?a *little dog*, niwak?a *something short*. Also cf. the examples in **6.7** and **6.8**.

6.7. Some qualifiers, when used independently, appear with an infix -ney(a)-: nyaneyak?a *short man* (from ni-ha-; see Seneca II, **4.1**), niyeneyak?a *short woman* (cf. ni-wa-k?a, **6.6**), haneyes *tall man*, yeneyes *tall woman* (from -es *long, high, tall*).

6.8. Qualifiers expressing *color* (except -kę and -tyi; see **6.2**) are indeclinable and the noun with which they are combined take the prefix ni- (cf. **6.6**) and a suffix -otę? *or* -tę?: tyinyowai nikacitotę? *blue bird* (from cite?ǫ), cęsta?ę ni kashaistotę? *black snake* (from oshaista?), kwęhta?ę nikanǫhsotę? *Red House* (place name, perhaps an artificial formation (?); O), kwęhta?ę nyaweǫtę? *red flower* (from aweǫ). —With a possessive prefix, the following form was heard: tyinyowai nikikaotę? *I have got blue eyes* (from okaa? *eye, eyes*).

6.9. The attributive qualifiers in Seneca may either precede or follow the noun which they define: iyǫs oneǫ or oneǫ iyǫs *long corn* (iyǫs *long* is indeclinable); also cf. the examples in the preceding sections.

6.10. Forms expressing degrees of comparison were not recorded. Quite exceptionally, a form was found which according to EC functioned as a comparative: skanyotaes *longer lake* (cf. kanyotaes *long lake*); this statement may have no general validity. Another 'comparative' was found in hakowaneh *he is bigger*, that is, *he is a chief* (also according to EC); cf. kako-

[16] So also in nyaweǫs?a *little flower*, from aweǫ (cf. footnote 15).

wanętha? *it makes it larger*, i.e., *magnifying glass* (EC).

7.1. The forms of the numerals vary widely according to the nature of the noun they refer to, etc. The simplest forms are those used in counting (they are also used in the sense of *once*, *twice*, etc.), which are: 1. skat, 2. tekni, 3. sęh, 4. kei; kai (see Seneca II, footnote 17), 5. wis, 6. yei, 7. catak, 8. tekyǫ?, 9. tyohtǫ?, 10. washę.

The numerals 11–19 are formed by compounding the lower numerals with the suffix -skai: skaskai *eleven*, tekniskai *twelve*, seskai *thirteen*, keiskai *fourteen*, wiskai *fifteen*, catakskai *seventeen*, tekyǫ?skai *eighteen*. *Twenty* is expressed by the dual form (see **5.6**) of *ten*: tewashę; the numbers following, by this word with the forms just mentioned: tewashę skaskai *twenty-one*, tewashę wiskai *twenty-five*. The numbers 30–90 are also expressed by compounds: kei niwashę *forty*, wis niwashę *fifty*. *One hundred* is skat twęnya?e.

7.2. The above elementary forms are used in counting various objects. Usually they precede the noun, the numerals above *three* being connected with the noun by the same particle ni- as mentioned in section **6.6**; tekni *two* is followed by the dual form (see **5.6**). Examples: skat kait *one tree*, tekni tekait *two trees*, kei nikait *four trees*, wis nikait *five trees*, yei nikaitǫ? *six trees* (plural form; see **5.6**), catak nikaitǫ? *seven trees*, etc. (For diversity in form of the noun, cf. the general remark in **5.3**, end.)

7.3. For counting male persons there are special forms of the lower numerals: shaya?tat *one*,[17] tiyashe *two*, sę nyęnǫti *three*, kei nyęnǫti *four*,[18] wis nyęnǫti *five*.

Examples: shaya?tat haksa?a *one boy*, tiyashe teniksa?a *two boys*, sę nyęnǫti hatiksa?ashǫ? *three boys*.

7.4. For female persons the corresponding forms are: syeya?tat *one*, tekniyashe *two*, sę niwęnǫti *three*, kei niwęnǫti *four*, etc.

7.5. For animals certain other compounds with -ya?t- *body* are used: skaya?tat keǫtanehkwih *one horse*; for the numbers above *two* a construction analogous to the one mentioned in sections **7.3** and **7.4** is used: wis niwęnǫti aknoskwayę? tak?ę *I have got five chickens*.

7.6. The following constructions in time expressions were noted down. For *days*: swęnishæt *one day*, tewęnishake *two days*, sę niwęnishake *three days* (from węnishæ? *day*); for *months*: swęnitat or skat yawętętokę?tet *one month*, twęnitake or tekni yawętętokę?tet *two months*, sę niwęnitake or sę niyawętętokę?tet *three months*; for *years*: ęskaho or tyoshæt *one year*, teyoshake *two years* (also notice teyoshæshę *twenty years*).

7.7. In counting *miles*, the (local) prefix he- (= *there* or *where*) is used before the classificatory yo-: skat heyotkatwęh *one mile*, tekni heyotkatwęh *two miles*, sę heyotkatwęh *three miles* (cf. to niyotkatwęh *how many miles*?).

7.8. The following forms for counting money were recorded: skawistat *one dollar*, tekawistake *two dollars*, sę nikawistake *three dollars* (from kawistat *dollar*), skakwęnishæt *one cent*, tekni kwęnis *two cents*, sę kwęnis *three cents* (from kwęnishæt *cent*, *penny*) the fact that the dual form (cf. **7.2**) is not used here may be explained from the loanword character of the word kwęnis (from English *pennies*).

7.9. The list of numerals given in the preceding sections is by no means complete. The form sęniyǫ *three* was used by Mrs. Cl in a story referring to the *three stripes* on the chipmunk's back; EC used it in the phrase sęniyǫ hatihsęnowanes *three chiefs* (for the suffix -s, see section **5.6**, end).

7.10. No ordinal numbers were recorded.

[17] Literally *one* (s-) *body* (-ya?t-, with the masculine prefix ha- *he*, **5.3**); in skat (**7.1**), therefore, the numeral element is s-, while -ka- is the subjective prefix for the non-masculine sing. gender (cf. **5.3**).

[18] From ni-hęnǫ- through loss of vocalic -h- (see Seneca II, **4.1**).

8.1. Personal pronouns. The personal pronouns are: i *I*, *we* (sing., dual, and plural, exclusive and inclusive form), is *you* (sing., dual, and plural form), wae *he, she, it, they* (used in all genders and numbers).[19] These forms may be preceded by the element ne? (n-; see **5.7**): ne?i *I, we*, ne?is *you*, newae (probably for ne?wae) *he, she, it, they*. Diminutive (?) forms in -?a are also used: ne?i?a, ni?a *I, we*, is?a, ne?is?a, nis?a *you*.

8.2. In the third person the following forms are furthermore used, which may correspond to 'self': haǫhwah *he* (*himself*), kaǫhwah *she* (*herself*), aǫwah *it* (*itself*), hǫnǫhǫ? (masc.), ǫnǫhǫ? (non-masc.) *they themselves*).

8.3. A pronominal owner (in the possessive construction) is usually expressed by a possessive prefix (see sections **5.8, 5.9**). There also exists a kind of possessive pronoun in Seneca, formed according to the same principle as the forms described in **8.2**; its base is -(a)węh, which we may render approximately by *property*. The forms are: akawęh *my property, my own, mine, my*, sawęh *your property, your own, your(s)*, howęh *his property, his own, his*; non-masculine, common, or plural forms were not recorded. Examples: i akawęh *something I owned*, i akawęh æhkwa? *my bread*, is sawęh *yours*, ne howęh *his people*. The construction may be verbalized: i akawęh yeksa?kowa *I own a pretty woman*.

8.4. Of demonstrative pronouns, the following were recorded: hikę, ne? (neh), nehoh n-, nękę, ne?ne?, nǫtaikę, sikę; since the precise meanings and distinctions are not clear, we shall give the translation obtained in each case in the examples. In many of the above forms, the initial n- is no doubt the element ne? mentioned in **5.7**; hikę and sikę are probably alternative forms (since h- and s- were found to alternate in other forms as well). The demonstrative pronouns are all indeclinable and may either precede or follow the noun they define: hikę hǫkweh *that man*, hikę hęnǫkwehshǫ? *those men*, takoci hikę *that cat*, sikę hǫkweh, sikę hęnǫkwe(h)shǫ? *that, those*, nękę hǫkweh *this man*, nękę hęnǫkwe(h)shǫ? *these men*, nękę hanǫhsot *this house*, nǫtaikę *this*, ne?ne hǫkweh *that man there*, sęnǫh neh syee *don't do that*, nehoh nękyee? *I will do this*.

8.5. The following interrogative pronouns were recorded: sǫ *who*? (with the plural form sǫshǫ?), na?ot (also na?t) *what*? (with the compound forms ahtę?tina?ot, ahtę?na?ot, tę?na?ot),[20] and sǫna?ot *who*? Examples: sǫ hikę *who is that*? sǫshǫ? hikę *who are those*? na?ot *what is it*? (verbalized), na?ot hayasǫh *what is his name*? tę?na?ot hikę, nękę *what is that, this*? tę?na?ot *what is it*? (verbalized), sǫna?ot hikę *what is that*? sǫna?ot nękę *who is this*?

8.6. By addition of the syllable -kaa? indefinite forms arise: sǫkaa? *somebody*, sǫkaa? taasnyet *somebody answered*. These may again become negative (= *nobody*) by combination with the negative prefix te?-: te?sǫkaa? *no one*, te?sǫkaa? yakǫkweh *there is no woman* (verbalized).

8.7. Other pronominal forms are: akwekǫh (-kwekǫh) *all*, oya?, noya? *other*, weso? *much, many, plenty*, and wistę? (also kwistę?) *anything* (*nothing*). The form -kwekǫh may be inflected: twakwekǫh *we all*, swakwekǫh *you all*, hatikwekǫh *they all*; otherwise akwekǫh may be construed with inflected nouns: akwekǫh swaksa?ashǫ? *you all boys*, ohsǫtakwekǫh *all night*; also kakwekǫh (the non-masculine sing. form; see **5.3**) is used as akwekǫh: kakwekǫh itwatkę? *we all get up*. The other forms are usually indeclinable: ahtak weso? *too much*,[21] hǫkweh noya? *another man*, noya? kaya?tǫhshæ? (*no*) *other book*, nis te?oya? *just like you* (literally *you, not another*), wistę? taayeteih *he does not know anything*.

[19] The gender and number appears from the construction with a verb: taswe? ne?is?a *are you all coming*?

[20] The element ahte- also occurs in ahte?kwa *it is strange* and ahte?kwakowa *it is very strange* (according to Ch).

[21] An alternative form, looking like an inflection, occurred in koweso? *too much*.

SALISH-WAKASHAN LEXICAL COMPARISONS NOTED BY BOAS

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In 1949 I published some material tending to substantiate Edward Sapir's theory of the common origin of the Salish, Wakashan and Quileute stocks, along with previously unpublished comparisons by Sapir.[1] Another interesting document may now be added, a set of comparisons by Franz Boas, found among his unpublished papers and brought to my attention by Gladys Reichard. It consists of forty-eight comparisons, mainly between Chehalis of the Salishan stock and Kwakiutl of Wakashan, but with additional Coeur d'Alene forms in a number of the cases. There are no comments to indicate what Boas considered to be the significance of the similarities he found. Certainly he must have thought them to be more than accidental resemblances or he would never have bothered to draw up the list. He must further have related these lexical affinities with the strong structural similarities which he had noted among Salish, Wakashan and Chemakuan.[2] It is possible that Boas regarded this as another case of indeterminable historic relationship, falling under his remark that, "In many cases historical relation must be assumed, but whether we are dealing with mixture of languages or with divergent branches of an ancient stock will remain doubtful."[3] I believe I have demonstrated that indeterminate cases can hardly exist,[4] and I expect that the common origin of the three stocks under discussion will soon be fully established. I consider this document of Boas' to be an important bit of corroboratory evidence.

Chehalis, Coeur d'Alene and Kwakiutl are hundreds of miles apart. Direct borrowing among them would be impossible. However, Kwakiutl has some Salish neighbors (principally Comox), and it is conceivable that it might have borrowed from these neighbors words that are cognate with those of Chehalis and Coeur d'Alene. It is also possible for culture words to pass with relative rapidity from language to language until they are current over a considerable area. Three or four of the comparisons in Boas' list could represent borrowings. The rest are not semantically the kind of elements which are normally borrowed. Furthermore, differences in form and sense suggest long divergence after common origin. In a few cases the phonetic form is sufficiently great to raise doubts as to whether there is any historic connection at all.

In the list, Kw, Ch, Cr represent Kwakiutl, Chehalis and Coeur d'Alene, respectively. The phonetic symbols are modified in conformity with my phonemic analysis and usage of signs. c is like ts, ç like English ch, ƛ like dl, x̌ like tɬ, ʒ like dz. The symbol for the murmur vowel is omitted, because this sound is an automatic and non-distinctive feature in certain consonant clusters.

Kw ʒ̓ʔlał, Ch calɬ *lake*. Kw mɬus *kidney*

[1] Morris Swadesh, The Linguistic Approach to Salish Prehistory, in Marian W. Smith ed., Indians of the Urban Northwest, New York, 1949, pp. 161–71; Edward Sapir, Salish-Wakashan Comparisons, ibid. pp. 171–3.

[2] Franz Boas, Kwakiutl, esp. p. 427, in Franz Boas ed., Handbook of American Indian Languages, part I, Washington 1911, BAE-B 40; Franz Boas, Kwakiutl Grammar p. 205, APS-T, new series vol. 37, part 3.

[3] Franz Boas, General Anthropology (p. 139, New York 1938).

[4] Morris Swadesh, Diffusional Cumulation and Archaic Residue as Historical Explanations, SJA 7.1–21 (1951); see also IJAL 19. 26 f., 223f.

fat, Ch Cr mɬus *kidney*. Kw mnk-, Ch mnç *dung*. Kw pku, Ch spçu? *hand basket*. Kw Ch Cr mus *four*. Kw ƛ̓mq̓a, Ch ƛ̓amq̓ɬ *yew tree*. Kw k̓mumu, Ch ç̓muma *fir needles*. Kw pusa, Ch pus *to swell*, Cr hn-pu?s-inç *sorry* from *swell* (?) *intestines*. Kw ƛ̓uqʷ, Ch ƛuq̓ *bare*, Cr łq̓ʷ *bald*. Kw puẋʷa, Ch puχʷ, Cr puxʷ *to blow*. Kw ʒ̓am, Ch ć̓am, Cr ć̓m̓ *to suck*. Kw sap *to throw a long thing*, Ch sp̓ *to strike*. Kw pl- *thin*, Ch p̓a?l *thin*. (*a little thick*), Cr peł *thick*, Kalispelm piɬ *thick*. Kw ć̓uxʷ-, Ch ć̓χʷ-, Cr ć̓aẇ *to wash*. Kw slp-, xlp- *to twist*, Ch ć̓lp *to spin*, Cr seɬ *perplex*. Kw yaχ-a, Ch yxʷ *to melt*. Kw quχ, Ch qʷaχʷ, Cr qum̓ *grey*, Cr qu?ɬ *dust*. Kw ?ik, Ch ?ay *good*. Kw ƛ̓is, Ch sƛ̓içɬ *skin*. Kw χƛ̓- *to break a paddle*, Ch χƛ̓ *to break*. Kw ʒ̓k-, Ch ciç *to rub*. Kw mk *to swallow*, Ch makʷ *to bite off a piece*. Kw ɢmxʷ- *to bend head*, Ch qamukʷ *bent*. Kw mu?, Ch maƛ̓ʷ *to pile up*, Cr maq̓ʷ *pl. objects lie*. Kw gʷlk-, Ch xʷlq *to rub*. Kw hil, Ch yal *to hire*. Kw χuxʷ, Ch χʷlq̓ʷ *to split*, Cr χʷeq̓ʷ *grind meal*, χʷaq̓ʷ *separate good from bad*. Kw kʷiq, Ch qlχ *angry*. Kw kʷaxʷ *hole*, xʷlp *hollow*, Ch k̓ʷlχʷ *hollow*. Kw pχ *shaman*, Ch plχʷ *to cure*. Kw yul, Ch xʷl *to drift*. Kw łuwaλa, Ch łwal *to leave*. Kw ?ugʷ-, Ch ?uxʷ *different*. Kw q̓ʷiɬ *to crush*, Ch q̓ʷiƛ̓ *to chop*. Kw ƛ̓qʷ *to break off branches*, Ch łq̓ʷ *to break*. Kw lkʷ-, Ch lq̓us *weak*. Kw łinm, Ch łixʷ *to take away*. Kw qχ-, Ch q̓ʷaχ *forked*. Kw ƛ̓mkʷ *to throw spear in a game*, ƛ̓mxn *to cast spear*. Kw yx-, Ch χxʷ *quick*. Kw lup *empty*, Ch lupxʷɬ *hole*, Cr laṗχʷ *it fits into socket*. Kw ɢʷlik *gum*, Ch qʷalɬ *pitchwood*. Kw p̓lχ *fog*, Ch spχm *steam*. Kw gʷik-, Ch skʷuyxʷ *whale*. Kw ƛ̓mk *to wedge*, Ch ƛ̓m *to hew*. Kw q̓uɬ, Ch q̓ʷl, Cr k̓ʷul̓ *to cook*. Kw k̓lq-, Ch k̓ʷlç̓ *to extinguish fire*. Kw migʷt, Ch miwt *seal*.

ISTHMUS ZAPOTEC VERB ANALYSIS I

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0. Introduction
1. Background data
1.1. Aspects
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0. In the analysis of Isthmus Zapotec[1] verb structure, we are confronted with a serious problem of grouping certain morphs into morphemes. The optimum solution seems to be one which requires the establishment of a somewhat new criterion for such grouping, one which may have a value more general than simply for the analysis of Zapotec verb morphology.

1.1. Nearly every complete verb form is of one or another of seven[2] ASPECTS, and fifty per cent of the verbs also occur in one of two VOICES. The aspects are: HABITUAL, as in ruka?a-beé[3] *he (regularly) writes*; INCOMPLETIVE, as in zuka?a-beé *he will write*; CONTINUATIVE, as in kuka?a-beé *he is writing*; UNREAL, as in ké nuka?a-beé *he didn't write*; COMPLETIVE, as in bika?a-beé *he wrote*; POTENTIAL, as in tšé guka?a-beé *he's going to write*; and PERFECTIVE, as in waka?a-beé *he has written*.

1.2. The voice contrast is between the simple and the CAUSATIVE voice. Formally the distinction is shown by the simple stem alone versus the simple stem plus a causative morpheme, which we can call the causative stem.

Semantically, the simple form is related to action in which the agent is not important, i.e. the subject is acted upon or acts upon himself, while the causative form is used for action in which the emphasis is on the agent who brings about the action. For example, rinda?abi-nií *it boils*, or *it gets boiled* vs. rusinda?abi-be nií *she boils it*.

Those verbs which do not appear in both voices we are calling NEUTRAL stems, for

[1] A language spoken by about 75,000 Indians in the southern part of the state of Oaxaca. Data were gathered during field trips to the town of Juchitán in the years 1944–50, under the auspices of the Summer Institute of Linguistics. The author wishes to express appreciation to Kenneth L. Pike, Eugene A. Nida, and William L. Wonderly of the Summer Institute of Linguistics and to Charles F. Hockett of Cornell University for their valuable assistance in the verb analysis and the preparation of this paper.

[2] In addition, a few verbs may also occur with a stative prefix na- (cf. bikiitši *turned white*, nakiitši *is white*). The prefix na- also occurs with a great many stems which have no other distribution in common with the verbs, but which have no morphological criteria to be considered as a separate major distribution class.

[3] The consonant phonemes of Isthmus Zapotec are: voiced fortis L, N, W; voiceless fortis p, t, k, s, š; voiced lenis n, l, w, y, r apical voiced flap; voiceless lenis h (actualized as a homorganic voiceless nasal or lateral preceding voiced nasal or lateral), f (occurring only in borrowed words), ? glottal stop, occurring as part of syllable nucleus; voiced lenis varying freely to voiceless b, d, g, z, ž; voiced lenis m, varying to fortis in word-medial position; rare phonemes r̃ (apical voiced trill found in only three native-origin words but now being introduced in borrowed words) and b̃ (a bilabial voiced trill found in only one word: berenb̃ *ant lion*. The vowel phonemes are i, e, u, o, a. The tone phonemes are high and low, high symbolized with an acute accent, low left unmarked.

example, kutše?e-beé *he is making mistakes*; kuyuubi-be nií *he is looking for it.*

With a few exceptions, it is not too difficult to identify the portions of the word which carry the voice and aspect meanings. It is also easy to show that the rather large number of causative morphs are in complementary distribution, hence allomorphs of one morpheme.

The causative morpheme includes at least sixteen allomorphs, dividing the verbs into corresponding classes, each allomorph occurring with a different class. It is not necessary for the purposes of this paper to describe all of these allomorphs. The two most frequent are a prefix si- and the replacement of the first lenis consonant of the simple stem by the corresponding fortis consonant. In the following illustrations, a lowered dot is used to indicate the division between morphs, a hyphen for the division between stem and person subject enclitic and space for the division of grammatical words. The first morph in each case represents the aspect; the last before the hyphen is the simple stem; and where there is a morph between these two it represents the causative. In the case of the replacive, the first consonant is marked as part of the simple stem. The morph which follows space is the object. In each case the simple form is given first.

ri.ku?ušu-nií *it gets wrinkled* and ru.si.ku?-ušu-be nií,[4] *he wrinkles it*; ri.ro?o-beé *he gets* (or *is*) *fat* and ru.si.ro?o-nií *it is fattening*; by.a?anda-beé *he was forgotten*; and bi.si.a?-anda-beé *he forgot* (note also another usage of the simple stem of this verb: by.a?anda-ni[5] la?á-beé *it was forgotten by him*—freely, *he forgot*); bi.žaale-nií *it came open* and bi.-šaale-be nií *he opened it.*

2.1. However, although the morphemic identification of the causative allomorph is simple, there are some problems regarding the analysis of morphs of varying shapes for the aspects. There are at least two different ways for grouping these morphs into morphemes, and each way has advantages and disadvantages. This problem is the subject matter of the present paper.

2.2. One of these aspects, the perfective, is represented by only one form, wa-[6]; another, the potential, is represented by two overt forms, gi- and gu- and also by zero; the remaining five are represented by two forms for each. These morphs fall by virtue of their distribution into four intersecting sets, of which three have more in common with each other, both in form and distribution, than with the fourth. Each set includes one morph for each aspect:[7]

	1A	1B	1C	2
Habitual	ri-	ri-	ri-	ru-
Incompletive	za-	za-	za-	zu-
Continuative	ka-	ka-	ka-	ku-
Unreal	ni-	ni-	ni-	nu-
Completive	bi-**	gu-*	gu-*	bi-
Potential	gi-	gi-	ø-*	gu-
Perfective	wa-**	wa-	wa-	wa-

2.3. Probably the simplest way to approach our problem is to note first the

[4] In the writing of the inanimate pronoun nií, space and hyphen do not symbolize a phonological difference, but distinguish between two morphologically different patterns. The object (written nií) parallels in usage the free forms in the person and animal third persons and the other persons, while the subject (-nií) parallels the clitic forms.

[5] When in phrase-medial position, third person singular enclitic -nií and other forms ending with geminate vowels with high tone on the second, lose the second vowel, and in most cases a following low tone is replaced by high.

[6] Except for phonologically defined alternants which are ignored in our main discussion. These are alternants of shape conditioned by the shape of the following stem. In the list which follows, the first in each series (between semicolons) is the shape occurring before glottal-initial stems; the second before vowel-initial stems and the third before other stem-types. — indicates non-occurrence: — : ry- : ri-; — : zy- : za-; kayu- : kay- : ku-; — : kay- : ka-; — : ny- : ni-; nyu- : nu- : nu; bi- : by- : bi-; — : gy- : gi-; sayu- : way- : wa-. (The other morphs discussed in the text are not subject to such alternation.)

[7] Set 1A is statistically the most common set. Forms marked with one asterisk are different from the corresponding form in 1A; forms marked with two asterisks are those which occur also in set 2.

various distributional relationships between the aspect morphs and the neutral, simple and causative stems. The relationships will be stated in terms of seven distribution types (dividing the verbs into corresponding distribution classes), the first of which consists of the neutral verbs, and the other six of the remaining verbs, which have a contrast in form between simple and causative stems. They are classified according to the difference or sameness of stem and of aspect prefix in simple and causative voice.

Type (1). Neutral stems. These may call for any set of aspect prefixes, each stem being limited to just one set.

Type (2). Different stems and different prefixes in simple and causative voice. There are three allocations of aspect prefix sets: 1A with simple, 2 with causative; 1B with simple, 2 with causative; 1C with simple, 2 with causative.

Type (3). Same stems but different prefixes in the simple and causative. There is only one allocation of aspect sets: 1A in simple, 2 in causative.

Type (4). Different stems but same prefixes in simple and causative. These occur with three prefix set combinations: 1A in both, 1B in both or 2 in both.

Type (5). Same stems and same prefixes (1C) in simple and causative.

Type (6). Different stems but prefixes of sets which differ in only one or two aspects. 1A in simple, 1B in causative; 1A in simple, 1C in causative; or 1B in simple, 1C in causative.

Type (7). Same stems; prefixes as in (6). This holds for only one verb, which has aspect set 1A in simple, 1B in causative.

Note that there are four ways in which the fact that the form is causative can be deduced from the overt shape of the word: (a) in distribution type (4) the causative morpheme, and it alone, identifies the voice; (b) in distribution type (2) the difference is marked both by the presence of the causative voice morpheme and by the choice of aspect prefix; (c) in distribution type (3) the choice of aspect prefix alone indicates the voice distinction; (d) in distribution type (5) the voice distinction cannot be deduced from the overt shape of the verb at all, but only from syntactic environment. Distribution types (6) and (7) are combinations of the above because the various sets of l prefixes are different in only one or two aspects.

We have seen then that there is some correlation between the choice of aspect prefixes and voice, sets 1A, 1B, and 1C occurring most commonly with the simple stem and set 2 occurring with the causative. We see also that in some cases the choice of aspect prefixes is the only overt means of differentiating between the simple and causative voice. These facts are the source of our problem in the morphemic grouping of aspect morphs. Must we take each aspect morph as a separate morpheme? Or can we group all those morphs for a given aspect together, giving just seven aspect morphemes?

2.4. In order to solve this problem we must consider each alternative in detail. In each case our procedure will be to discuss each distribution class separately.

2.4.1. Hypothesis 1: each aspect morph is a separate morpheme.

Although several of the distribution types do not clearly indicate the morphemic character of the varying forms for each aspectual meaning, type (3), in which we find the aspect prefixes alone carrying the meaning difference between simple and causative voice, is proof enough that the two forms ru- and ri-, for example, are separate morphemes: ru- has the meaning of habitual aspect and causative voice; ri- that of habitual aspect and simple voice.

Other instances of this same way of differentiating meaning are found in distribution type (7), where in certain aspects, the aspect prefix again is the only indicator of voice. In distribution type (2), even though the stem shapes differ as well as the choice

of aspect prefixes, we may choose to regard the voice meaning as carried in part by the aspect prefixes.

We must note also that in eighty per cent of the verbs which have two different stems, prefixes of set 1A, 1B or 1C occur with the simple and prefixes of set 2 occur with the causative, indicating the association of meaning with the different forms.

For the remaining distribution types, since we have taken each aspect morph to be a separate morpheme, we must continue to consider it so.

2.4.2. Hypothesis 2: the prefixes of each aspect are allomorphs of a single morpheme.

With verbs of distribution type (1) the prefixes for any given aspect are in complementary distribution, since for any single verb root only the prefixes of one set are used.

For verbs of distribution type (2) we may once again regard the distribution as complementary, the prefixes of set 1A, 1B and 1C occurring with simple stems and those of set 2 with causative stems. Also like (2) are certain completive and potential aspect contrasts in type (6), where again the aspect morphs are in complementary distribution.

Verbs of distribution types (4) and (5) present no problem for this analysis, since there is only one morph for each aspect. This is true also, of course, for most of the aspects with verbs of type (6) and certain aspects of all verbs.

Together, verbs of types (1) and (2) include eighty-six per cent of the total number analyzed. If we add types (4), (5) and (6) we find another ten per cent which cause us no trouble in our analysis. There is therefore such a very small percentage of disturbing cases that we could possibly base our decision on simply that which is statistically predominant. If an objection to this interpretation is raised on the basis of fairly frequent association of aspect prefixes with different voices, we can point out that the very regularity of association of sets 1A, 1B and 1C with the simple and set 2 with the causative voice is an indication of complementary distribution.

However, even in the small percentage remaining we can argue for the single morpheme hypothesis. In type (3) and likewise the two trouble-making aspects of type (7) we can establish complementary distribution by considering the causative stem to contain the causative morpheme in the shape zero. This analysis seems plausible in the light of the fact that we have already been forced to establish sixteen different allomorphs of the causative morpheme.

2.5. Summary. Because of the complexity of the picture, our discussion of each hypothesis has had to be made in terms of each distribution type individually instead of in one over-all statement. All of the distribution types except (3) seem to lead us to favor the allomorph hypothesis, and even type (3) may be made to fit.

2.6. Two principles of evaluation emerge in this discussion. The first is the use of statistics. We are inclined to accept that hypothesis which leaves the smaller residue of difficult cases. This of course is in line with Bloomfield's definition of 'regular' as that which is statistically predominant.[8]

The second concerns the conditions under which it is legitimate to postulate a zero allomorph. In the present case it seems wise to do so, but it should be noticed that this forces a methodological assumption. Nida has criticized Bloch for assigning meaning distinction to covert forms even when overt ones were present and has insisted that in such a case the semantic difference must be assigned to the overt difference instead of, or in addition to, the covert.[9]

I agree with Nida that to assign the meaning differences of the English *sing* : *sang* to a zero morpheme is not desirable. How-

[8] Leonard Bloomfield, A Set of Postulates for the Science of Language, IJAL 15.195–202 (1949).

[9] Bernard Bloch, English Verb Inflection, Lg. 23.399–418 (1947); Eugene A. Nida, The Identification of Morphemes, Lg. 24.414–441 (1948).

ever, we can restate Nida's Principle 4[10] to allow its application to such a situation as the one under consideration and still not be following Bloch's procedure.[11]

Note that in the English case the difference between the forms *sing* and *sang* occurs only before the postulated zero suffix, and except for the occurrence before this allomorph of the past tense morpheme, there is no pattern of complementary distribution of the two stem allomorphs *sing* and *sang*. If we accept the interpretation which posits the zero allomorph, the two forms are in complementary distribution; if not, they are not in complementary distribution either here or anywhere in their occurrence.

In contrast to this, the ri- and ru- of ri.laa *is saved*, or *escapes*, and ru.laa *saves*, for example, occur with many verbs which show an overt difference between the simple and the causative stems. If for the moment we leave out the cases in which the simple and causative stems are identical, ru- and ri- are in complete complementation. Since the basis of complementation is already established in environments where the causative is overtly represented, we can legitimately posit a zero allomorph of the causative morpheme, making the complementation complete. In other words, since the complementation is based on a common occurrence with an overt difference in the environment, there is much evidence for considering ru- : ri- to be sub-morphemic, even before considering the few cases in which the following simple and causative stems are phonemically identical. Bloch's postulated allomorphs *sing* : *sang*, on the other hand, have a complementary distribution only on the basis of a zero suffix.

The following rephrasing of Nida's Principle 4[10] includes this type of situation:

If two related forms contain an overt difference and a structural zero difference as the only significant features for establishing a minimal unit of phonetic-semantic distinctiveness, the semantic value should be assigned to the overt difference, not to the zero, unless that overt difference can be established as sub-morphemic on the basis of complementation in cases where no zero is involved.

[10] Nida, op.cit. and Morphology: the Descriptive Analysis of Words, UMPL p. 54.

[11] Bloch (in personal communication, 1953) has indicated that he now has modified his analysis of such phenomena.

PHONEMIC RHYTHM IN COMANCHE

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0. Introduction
1. Rhythm
2. Lexically placed stress
3. Interpretation of vowel length
4. Conditioning of intonation
5. Gradient differences

0. At least two points of theoretic interest are revealed by an analysis of Comanche prosodic features.[2] The first of these is that there are rhythm patterns which are arbitrary and contrastive, and which to a degree at least carry emotional affect. They may also possibly be associated somewhat with grammatical sentence types.

The second point of interest is that Comanche shows no structured system indicating affective situations by contrastive intonational pitch contours such as occur in English and many other languages. Affective situations are indicated to a small degree by emphatic stress and attentative rhythm[3] (and by particles), but pitch contour is conditioned by other factors.

A minimum of intonational contrast has previously been reported for Oto,[4] another Indian language of Oklahoma, but languages with little or no contrastive pitch system have not generally been described. In Oto intonational contrast occurs only on exclamations. Comanche however has not even that minimum of pitch contrast.

In discussing the nature of intonation, Bolinger has declared that it is 'both conventional and instinctive', that the physiological tension which is the basis of intonation can be 'trained out' (which, he feels, accounts for lexical pitch systems), and that English intonation is not an arbitrary structure because we do not 'occasionally deliberate about our choice of contours'.[5]

On the other hand, without denying the physiological basis of any part of speech or denying the close physiological association of GRADIENT differences of pitch, or of intensity of stress, this paper would lend weight to an understanding of the 'arbitrariness' of intonational SYSTEMS where they occur. Languages range from the complicated and contrastive system structure of English intonation to the lack of any such contrastive structure in Comanche.

The data presented here will show that in Comanche length, stress, and rhythm are interconnected in their distribution and mutual conditioning, patterning together in the total phonological structure,[6] and that

[1] The research for and preparation of this paper was accomplished while the author was a guest instructor in linguistics at the Summer Institute of Linguistics at the University of Oklahoma in 1949. Credit is due to the Institute and to The Christian and Missionary Alliance for making this project possible. Data were collected on a tape recorder, with Mrs. Emily Riddles, of Walters, Oklahoma, as the main informant. Materials were checked, and conversation recorded with the help of several other informants. Special thanks are due to Kenneth L. Pike for suggestions and criticisms, and to Elliott Canonge for checking some of the analysis of intonation presented here. Parts of this paper were presented with recorded examples at the summer meeting of the Linguistic Society of America at Ann Arbor, Michigan, in July, 1949.

[2] Prosodic features are here defined as quantitatively significant phenomena. In Comanche these include phonemic stress, rhythm, and length, and non-phonemic pitch. This definition follows Kenneth L. Pike on 'suprasegmental phonemes' in Phonemics: A Technique for Reducing Languages to Writing, Ann Arbor, 1947, p. 63a.

[3] A distinctive rhythm pattern with meaning 'attention here' (see 2).

[4] Kenneth L. Pike, The Intonation of American English, Ann Arbor, 1947, p. 21.

[5] Dwight E. Bolinger, Comments on Pike's American English Intonation, SIL 5.69–70 (1947).

[6] For a tentative list of other Comanche Pho-

an adequate description of the phonology must include phonemic rhythm. The prosodic features operate on two levels, the lexical level and the level of the larger phonological and rhythm group. Examples of the interdependence of these features may be seen in that non-phonemic pitch is conditioned by lexical stress and vowel length. Emphatic stress furthermore potentially coincides in point of occurrence with lexical stress. Rhythm is also generally associated with lexical stress in its placement, and phonetically long vowels may be contrasted with phonetically short vowels only within the limits of rhythm. The details of the system follow.

1. Comanche utterances are characterized by a marked rhythm which consists of a sequence of secondary rhythm stresses with approximately the same timing between stresses. A rhythm unit is defined as the sequence of syllables grouped together by such stresses or pause. The boundaries of rhythm units are marked with a subscript tic /ˌ/. ˌ¹tenahˌpīʔˌcaʔ ˌ¹piвiaˌnakIˌkatĭ ˌ¹puʔ-etu ˌ¹miʔaarĭ *The man with the big ears is walking in the road.* ˌ¹nameˌwahˌsīkʷIˌtīī ˌ¹piвiaˌkahniˌnīī *eight big houses.*

Rhythm units in sequence tend to have perceptually the same timing, with some fluctuation and variation. So important is this timing that rhythm units of one, two, or even three syllables are sometimes perceptually alike in duration. In the following example the rhythm unit ˌʔa (because of the accompanying pause) is perceptually of the same length as such sequences as ˌ¹parĭвo. ˌ¹ʔiknīʔ ˌ¹kahnikĭ ˌ¹ʔikahˌciʔ, ˌ¹tīвooˈʔa, ˌ¹tīвooˌpha, ˌ¹tīhkaˌʔa, ˌ¹nakarīˌʔa, ˌ¹tīasī, ˌ¹parĭвooˌʔa, ˌ¹punīʔ *As I come into the room I see the pencil, the paper, the table, the chair, and the pen.* In sentence (21) of the text[6a] **(6.1)** there is some variation in timing due to the disparity of number of syllables in the units, but there is a tendency toward perceptual equalization wherever possible.

This perceptual regularity of rhythm unit timing is accomplished by several devices including pause (as in the example of the paragraph above) and the non-phonemic lengthening of a consonant to keep a phonemically short vowel relatively so and yet preserve the perceptual length of rhythm unit time.[7] ˌ¹piaroˌsaвIˌt[·]ī nīˌ¹kahnicaʔ ˌ¹kuhcuʔ ˌmaʔI *My big white house burned down.* ˌ¹sīīˌmanoˌwīmĭˌnaˌt[·]īī ˌ¹teˌnaˌnīī *nine men.* In sentence (9) of the text there occurs the example ˌ¹tīmaˌrīˌm[·]uakuˌвai *lots of water*; in sentence (18): ˌsuniˌ¹nah[·]ˌkatĭ *staying as he was.* In cases of irregularity of number of syllables in the rhythm group there may occasionally be no timing compensation, and irregular timing may occur. See text (20): ʔuˌ¹tīrīeʔˌtīhˌciʔˌ¹nīī *his dear little children*, where there is no adequate compensation for the disparity between the

nemes see Henry Osborn and William A. Smalley, Formulae for Comanche Stem and Word Formation, IJAL 15.93 (1949) fn. 2. The transcription used in this paper will follow that of Formulae except for the addition of /,/ anticipation pause, /./ non-anticipation pause, /ˡˡ/ emphatic stress, /ˌ/ rhythm marker, and /ˌˌ/ attentative rhythm, all defined in this paper. Hyphen (-) will not be used here because its only significance in Formulae is for certain morphological boundaries.

For other views on Comanche segmental phonemes see Venda Riggs, Alternate Phonemic Analyses of Comanche, IJAL 15.229–231 (1949). The present analysis parallels generally her Analysis A in treatment of consonants, but differs from it in finding /n/ in 'utterance final' position (see text sentences 5, 8, 17, 18, 21 of this paper) in addition to her /ʔ/ and /h/ (p. 229), and in interpreting [Ĭ], when non-syllabic, as non-phonemic aspiration of a preceding consonant. This interpretation results in a larger number of consonant clusters as inspection of the data will show.

[6a] Section 6, Illustrative text will appear in a later issue of IJAL.

[7] In the otherwise phonemic transcriptions of data in this paragraph the non-phonemic length is enclosed in brackets [·]. In the first example the consonant length is necessitated by the fact that voiceless vowels occur shorter than voiced vowels.

number of syllables in the respective rhythm units.

Rhythmic structural contrasts exist within utterances and between utterances, and the rhythm pattern of a given morpheme or sequence of morphemes is not always the same. In the following examples the sequence of morphemes ˈnï-mï-kuhcu? *buffalo* occurs with different rhythm patterns. ˌˈnïmï|kuh|-cu?a ˌˈkuma|ïï|ca? ˌˈpia|ʙïhï|kʷah|tïtu ˌˈtoo|-yïka|rïï *The buffalo bulls are grazing out on the prairie.* ˌˈsoo|tïï|ca? ˌˈpue|kʷaci?|nïmï|-kuhcu? ˌnïmï|ˈpia|ʙïhï|kʷah|tïtu ˌˈtoo|yïka|-rïï *Those wild buffalo are grazing out on the prairie.* Compare also the morpheme ˈ?ahpï? *father* in text sentences (17) and (20), ˈtïasï *also* in (4) and (8), ˈmekï *said* in (2) and (6), ˈsurïkse? in (4) and (8).

Rhythm stress generally coincides with lexical stress where it occurs (see **2**), but in some utterances lexical stress may be suppressed by rhythm. In such a case the high pitch feature of lexical stress is left to mark the point of its placement (see **4**). In the following examples wherever rhythm stress does not coincide with lexical stress /ˌˈ/, but lexical stress occurs without rhythm /ˈ/, the lexical stress should be read with high pitch but no stress. nï|ˈrua ˈrï|taatï ˌˈyuupǏ|ca? nï|ˈnïasï|mapǏru ˌˈnï-miitǏ *My fat little son is in the yard.* ˌˈsurïk|se? ˌˈsu?a|na ˈ?u|rïïkǏ ˌˈʙih|tïn *He took it out of the water.* Other examples may be found in text sentences (6), (11), (12), (14), (15), (19), and (20).

The rhythm units between pauses (/,/ or /./[8]) comprise a rhythm group. There are more likely to be differences of timing between rhythm groups than between rhythm units of the same group. In text sentence (1), for example, the rhythm group ˌˈpekʷi ˌʙï|-ˈtïrï|e?|tïï|ma|?ai *a fish with his children* occurs with even timing but different timing from the rhythm groups preceding or following. There is also a marked change of timing between the final rhythm group and those preceding it in (15). So far as has been ascertained at present, such differences are fluctuant and not meaningful.

The only association between rhythm and meaning differences so far detected is in situations demanding attention ('attentative') as in imperative constructions and the drawing of exaggerated attention to words or specific parts of utterances. This rhythm pattern consists of a deliberate, slow rhythm with few syllables to the rhythm unit and marked extra lengthening. It may optionally correlate with emphatic stress. In the following illustrations attentative rhythm (symbolized /ˌˌ/ for each rhythm unit with which it occurs) should be read with each modified syllable long, and such rhythm units containing vowel clusters with exaggerated length. ˌˌˈ?orii ˌˌˈnïmïˌˌkuhˌˌcu?ˌˌnii ˌˌˈpuuni *Look at those buffalo!* ˌˌˈpiaˌˌrïksïˌˌ-kïpǏ ˌˌˈkima ˌˌˈ?ɪʙUˌˌniˌˌtU *Beefsteak,* (nickname of a person) *come here!* Text examples may be found in sentences (5), (7), (8).

2. The contrastive placing of lexical stress may be seen in the following words: ˈtosahwI *silver,* waˈsape *bear,* mahtoˈkoo *thumb,* kuyuˈ-niˀnïï *turkeys,* nïmïˈkuhcu? *our* (pl.) *cow,* ˈnïmïkuhcu? *buffalo.*

Emphatic stress, which occurs occasionally for affective purposes, always coincides in point of placement with lexical stress. (See text sentences (9), (13), (14), (18).) Emphatic stress is used to give extra intensity to a situation, and not as in English to emphasize one word as against another. It may occur on a single point of lexical stress or at several such points in sequence. The distribution of lexical stress is most prevalent on one of the first three syllables of a word[9] and most often on the first syllable of a root or compound.

3. Interpretation of vowel length. Contrastive length of vowel may be seen in

[8] See **4**.

[9] The word is defined by implication as an intrapotential in Formulae pp. 98, 99. It is written bounded by space.

such pairs as ˈʔurĭ *that one* vs. ˈʔurĭĭ *those*, ˈtĭhkati *the one eating* (obj.) vs. ˈtĭhkatii *the ones eating* (obj.), ˈsookoʙai *lots of water* (obj.) vs. ˈsokoʙa *on the ground*, ˈmeeku *now* vs. ˈmekĭ *said*. These phonetically contrastive vowel lengths are interpreted phonemically as a sequence of two identical vowels by analogy to other VV sequences as ˈmĭa *moon*, ˈpĭeckU *tomorrow*, ˈpiapĬ *big*, ˈʔĭhpĭi *sleep*, ˈtuaʔ *son*, ˈtuinĭhpĭʔ *boy*, and ˈtĭrĭeʔtĭĭ *children*.[10]

Single vowels or sequences of identical vowels maintain their relative contrast except under conditions of morphemic alternation but the relative amount of difference in length between the two is conditioned by rhythm and position in the utterance. Sequences of identical vowels before pause (either /./ or /,/, see **4**) are generally extra long. Non-phonemic modification of length is conditioned by rhythm as follows. (1) Within the same rhythm group (but not before pause) a sequence of identical vowels is perceptibly longer than a single vowel, but not as long as if before pause. (2) A single vowel in a rhythm unit containing only one syllable with only one vowel will still contrast with a rhythm unit containing a sequence of vowels or two syllables, even when the timing is maintained as approximately the same, by a non-phonemic compensatory lengthening of a following consonant or by slight pause if the short syllable comes at a point of optional pause (see **1**). (3) When two parts of the utterance occur with rhythm groups which contain varying numbers of rhythm units, the relative contrast between single vowels and sequences of identical vowels applies only within the rhythm group because a vowel of one group may be non-phonemically longer than a sequence of another group. In text sentence (21), ˌˈtĭhtĭˌtaayuˌtuʔiˌnĭĭ *ones who will be little* at least three perceptible phonetic vowel lengths occur. taa is phonemically long but phonetically shorter than nĭĭ because the latter occurs alone in a rhythm group and the former does not. taa is shown to be phonemically long by its contrast with several short vowels in the same rhythm group.

4. The importance of rhythm (as limited as its affective meanings seem to be) is accentuated by the complete conditioning of pitch contours. In Comanche all utterances occur with the same relative intonational pitch contour. That contour may be described roughly as high pitch on lexically stressed syllables and regular pitch elsewhere, but there are other modifying factors which must be described.

Three basic phonetic pitch differences have been distinguished on voiced vowels:[11] pitch level[1] (high) occurs on lexically stressed syllables, sometimes with a slight drop on the end of a VV sequence. The height of pitch is correlative with the contrast between lexical and emphatic stress, extra height being sometimes associated with emphatic stress. Pitch level[2] (mid) occurs elsewhere except for optional[3] (low) before /./.

Variations of these pitches are: [1] > [1a] (high-falling glide) on stressed syllables which contain an identical VV cluster if the syllable is the last voiced syllable of the word (i.e., if the following syllable contains no voiced segments). [2] > [2a] (slightly higher than [2]) optionally preceding lexical stress within a word. [3] > [3a] (mid falling

[10] We cannot here decide the question as to whether or not such sequences constitute two syllables or one. For purposes of description here they are assumed to be one. So far as prosodic evidence is concerned, the evidence of pitch level would lend weight to interpretation as single syllables, whereas rhythm stress may occasionally occur on the second member of such a cluster as in ˌˈtĭrĭˌeʔˌtĭĭ [**6.1** (1), (2)].

[11] The superscript numbers, assigned to pitch differences which have been heard, have no significance except that of labels for phonetic phenomena. Examples in this section will be transcribed phonemically except for the pitch symbol in brackets with each syllable.

to low) optionally on unstressed syllables containing a VV sequence before /./. ˈʔa[1]ˈnaa[1a]. (exclamation); ʔo[2a]ˈnoo[1a]. (exclamation); ˌˈʔi[1]ˌʙia[2]ro[2]ˌko[2]ʔI. (exclamation); ˌˈʔii[1a], ˌˈsi[1]ma[2]nuʔ[2], ˌˈwa[1]-na[2]ˌwi[2]ˌwih[2]ˌtaʔ[2], ˌˈsi[1]ma[2]ˌnai[2]ˌku[2] ˈna[1]ˌʙo[2]ri[2] ˌˈʔu[1]ra[2]ʔI *Oh, I found a dollar bill*!; ˌˈʔu[2]si[2a] ˌˈha[1]kaa[2]ri[3] *Who's that*?; ni[2a]ˌˈha[1]kai[2], ˌˈyii[1a]kʷI *What shall I say*?; ˌˈkee[1a] ni[2]ˌˈri[1]ʙooʔ[2]ˌmaʔ[3] *No, that's my pencil*!

A check of texts, both narrative and conversational, made on tape recording, and observation of Comanche speech in other situations than informant ones, revealed that this one pattern with its variants occurs on all utterances.

The distinction made here between /,/ anticipatory pause, and /./ non-anticipatory pause, is as follows. Non-anticipatory pause is a pause preceded or followed by a modification of pitch or rhythm. It may be preceded by a drop of intonation to [3] or [3a]. It may be preceded by a dropping of the general height of voice through the utterance and followed by a sudden raising of voice height at the beginning of the next utterance. It may be followed by a quickened tempo of rhythm in the beginning of the next rhythm group. Anticipatory pause, on the other hand, is a pause without any modification of the pitch or rhythm of preceding or following utterances.

/./ may coincide with grammatical sentence units or may group several such grammatical units. In the text compare (1), (2), (3), etc., where the non-anticipatory pause coincides with grammatical units, and the latter parts of the text where fewer such pauses occur. /,/ anticipatory pause, may occur at any potential (symbolized here by space).

5. Some of the prosodic features described above occur occasionally in gradient degrees of difference. The range between non-phonemic pitches may vary without structural contrast under situations of extra stimulus.[12]

The total contour of an utterance or part of an utterance may be raised gradiently, especially in quotation situations, so that the quotation is optionally spoken on a higher pitch. This is true of text examples (2) and (7) but not of others which contain quoted materials. When the gradient raising occurs, the same relative contours, conditioned by stresses, vowel clusters and pause, are maintained, but all are gradiently higher.

Rhythm units may likewise be slowed or extended gradiently from normal speech to that of sleepy or tired situations. The non-structured variation lacks the intensity and precision of attentative rhythm types.

[12] Gradient differences of pitch in English or Comanche as opposed to the structured contrastive levels of English, are more directly associated with the physiological conditioning of which Bolinger speaks (see fn. 5). Physiological tension may vary the range between English phonemic pitch levels, as it may vary the range between the levels of languages with phonemic lexical tone, but so long as there is a point in any speech context beyond which the meaning changes, the levels are arbitrarily contrastive and not physiologically conditioned. Pike points out to me that the contrast between John, John, John, (with tone 4–3, 4–2, 4–1 respectively), may be maintained in normal voice, falsetto, or laryngealized speech ('low voice') and that the range may be small or great, but WITHIN ANY SPEECH STYLE THE CONTRAST IS PRESENT AND ARBITRARY, not 'instinctive' or 'physiologically' determined. The contrast is a conventionally structured one even though high pitch may be associated with emotional tension.

CAMPA (ARAWAK) PHONEMES

SYLVESTER DIRKS

SUMMER INSTITUTE OF LINGUISTICS

0. Introduction
1. Formation of phonemes
2. Prosodic features
3. Distribution of phonemes

0. Campa, spoken in eastern central Peru, has been classified with the large and widely scattered Arawak linguistic stock. That it is closely related to Machiguenga is well known and generally accepted among Peruvians. Its relationship to Amuesha, a neighboring tribe, is not apparent although the latter too is considered by some as belonging to the same family of Indian languages. The family includes also certain tribes of Bolivia and Paraguay.[1]

According to the latest Peruvian census (1940) the Campa language is spoken by 33,000 Indians who are sparsely scattered over the Upper Ucayali region of the Amazon Basin.

This description is based on material gathered from one informant, Alfonso, who lives at Shirintiari, a plantation on the Tambo River of eastern Peru. Some of the material has been checked with speakers of other dialects of the language; numerous dialects have been observed but are beyond the scope of this paper.[2]

1. Campa has fifteen consonant phonemes which are non-syllabics and four vowel phonemes which are syllabics. These are: /p, t, t^y, k, c, č, m, n, ñ, v, s, š, r, y, h/ and /i, e, a, o/. We tentatively write one phoneme of stress /ˊ/ (see **2.**).

1.1. Non-syllabics are classified as stops, affricates, nasals, fricatives, flap, and semivowels.

Stops are /p, t, t^y, k/: bilabial, alveolar, alveopalatal, and velar respectively. They are voiceless and slightly aspirated. Examples: pitíro *cockroach*, tapéca *a vine*, t^yápa *chicken*, kanfri *yuca*. Following the voiced nasal continuants they become voiced [b, d, d^y, g] as in kompiróši [kombiróši] *a palm leaf*, nihánta [nihánda] *far away*, nišínt^{y}o [nišíñd^{y}o] *my daughter*, kirínka [kiríŋga] *downstream*. However, in the second syllable of dissyllabic words in which stress falls on the first syllable this variation does not occur. Example: ínki [íŋki] *peanut* but never [*íngi]. /t^y/ occurs much less frequently than the other phonemes of this series and, but for the example above, is limited to word-medial position. Preceded by /o/ and followed by /a/, /k/ is actualized as a labiovelar [k^w] as in okakíhi [ok^{w}akíhi] *nearby*.

Affricates are /c, č/: alveolar and alveopalatal respectively. Like the stops, they are voiceless and slightly aspirated; but unlike the stops, they do not become voiced after nasals. Examples: caráto *carrying-bag*, čaráva *species of fish*.

Nasals are /m, n, ñ/; bilabial, alveolar and alveo-palatal. They are always voiced. Examples: kamári *devil*, maníro *deer*, iñáhi *his(a parrot's) bill*. /n/ before /k/ is actualized as [ŋ] as in inkáni [iŋgáni] *rain*. /ñ/ is relatively infrequent.

Fricatives are /v, s, š/. /v/ is voiced, flat, bilabial as in vacáci *meat*. /s/ and /š/ are voiceless, grooved, and are alveolar and

[1] See Weston LaBarre, The Aymara Indians of the Lake Titicaca Plateau, Bolivia (AA 50, No. 1, part 2 [Memoir 68, 1948]); and Handbook of South American Indians, Vols. 1 and 3 (BAE-B 143 [1946–48]).

[2] The material was gathered under the auspices of the Summer Institute of Linguistics during a period of six months' field work in 1947. I wish to express my appreciation for helpful suggestions concerning this paper from Richard Pittman and Donald Stark.

alveopalatal respectively. Examples: sankári *shining*, šankóro *species of lizard*.

The alveolar flap /r/ is voiced as in oriháni *small*.

Semivowels are /y, h/. /y/ is voiced, palatal, as in payánti *banana*. /h/ is voiceless, formed with the tongue in position for the vowel following it and so cannot be localized to any one point of articulation. Example: níha *water*.

1.2. Syllabics are /i, e, a, o/. /i/ is high, close, front, unrounded; /e/ is mid, close, front, unrounded; /a/ is low, open, central, unrounded; /o/ is mid, close, back, rounded. Examples: itíni (*man's*) *foot*, etíni *armadillo*, mápi *stone*, apáro *one*.

Before nasal consonants, both /i/ and /e/ tend to become more open and lax. A similar change in timbre is sometimes noticeable when these vowels appear unaccented in word final position. This is especially true of /e/. /i/ is sometimes unvoiced word-finally. In ordinary speech a brief, non-phonemic, non-syllabic vocoid [w] develops between the two members of the monosyllabic vowel cluster /oa/; this may be described as due to a lack of complete synchronizing of lip unrounding with the movement of the tongue into position for emission of the second vowel of the cluster. Example: oarínci [owarínci] *roasted* (*meat*). In the rare vowel sequence /ao/, /o/ tends to be raised to high open position as in máona [máuna] *species of potato*.

Preceding word initial and following word final vowels there is a conspicuous but non-phonemic glottal stop. The frequency of occurrence of this in the continuum can be adequately appreciated only by taking into account the facts that in Campa all words end in open syllables and that a sizeable proportion of them also begin with a vowel.

2. Considerably more research will be necessary to adequately understand the prosodic features of the language and so be in a position to make a reliable description of them. A few general characteristics of stress and intonation are here noted.

Stress tends to fall on the penult but thus far no rule has been found to account for the numerous exceptions. It is marked by /'/ in our present phonemic transcription. Whereas stress will probably prove to be phonemic, there is little indication that either pitch or quantity will prove so except possibly on an intonational level.

Interrogation is generally indicated merely by an intonational feature of the raising of the voice at the end of the utterance. In ordinary narration the voice drops slightly at the end of each sentence. A very pronounced intonational feature is the elevation of the voice for a whole sentence or two to express disapproval or surprise. Men sometimes utter such sentences in falsetto. When speaking to a person from a distance, brief sentences are employed with a rhythmic raising and lowering of pitch.

3. Syllables may consist of one or two vowels, of one or two vowels preceded by a consonant, of one vowel followed by a consonant, and of one or two vowels preceded and followed by a consonant. The following sets of words illustrate the occurrences and limitations of these seven syllable patterns in word initial, medial, and final positions. Syllable division (non-phonemic) is indicated by a low dot.

Word initial: V ó.na *hole*; VV oa.rín.ci *roasted* (*meat*); CV na.má.te *I swim*; CVV pói.se.ro *you light it*; VC on.kí.ro *mouse*; CVC nom.pa.ko.tém.pi *I will show you*; CVVC šién.ti *dragon-fly*.

Word medial: VV no.ai.té.ro *I will place it*; CV pó.ki.te *cook it!*; CVV na.vea.pá.ha *I arrived*; VC o.án.ci *clearing* (*of land*); CVC ni.šíñ.tʸo *my daughter*; CVVC no.pion.ká.ka *I have a fever*.

Word final: VV i.ro.ái *he kills us*; CV no.h̄á.te *I go*; CVV non.ki.ca.ta.héa *I will dress myself*.

Simple stems consist of one, two, three, and occasionally of four syllables. There

are also longer compound and reduplicated stems. Affixial morphemes are generally monosyllabic although a few dissyllabic ones have been identified. Certain morphemes, however, consist of only a single vowel or consonant and so comprise only the nuclear or marginal part of a syllable. For this and other reasons morpheme and syllable boundaries quite frequently do not coincide.

A word may be composed of one morpheme of one syllable or of as many as eight morphemes and nine syllables and possibly more. Representative of the two extremes are the words té *no* and no.pan.ki.hei.tai.ta.na.ké.ro *away from here, in the remote past, we* (excl.) *planted it* (*beans*).

The morphemes are: no- first person singular prefix; panki- verb stem *to plant* (*beans*); -hei collectivizer denoting the subject in company with others but excluding the person spoken to; -tai locative indicating that action took place away from the speaker; -t . . . e (a discontinuous morpheme) verbalizer; -an- infix indicating that action took place in the remote past; -ak- perfective aspect indicator, necessarily present before the morpheme preceding it can be employed; -ro substituting for the direct object of the verb.

Any one of the vowel phonemes may appear in all the positions of the syllable or word. Any one of them may constitute the syllabic of a syllable and may function also, independently, as a complete syllable in word initial position. When so functioning it is, in most cases, followed by a single consonant. One of the vowels in the CVVC syllable pattern must be /i/.

All of the theoretically possible combinations of two vowels occur except /*ae/, including combinations of identical vowels though these latter are infrequent. Such clusters are, except for rare instances in word initial position, always monosyllabic. Clusters of three vowels are invariably ambisyllabic and one vowel of the cluster must be /i/. Sequences of more than three vowels have not been found. Vowel clusters just described are exemplified: /ii, ie, ia, io/: íi.ri *his nose*, no.tie.roá.ka *I am kneeling*, pa.rián.ci *winter*, nió.te.ro *I know it.* /ei, ee, ea, eo/: am.pi.ta.sa.héi.te *we will fish* (*with hook*), na.vée.ro *I am able*, no.yéa *I eat*, keó.ci *hammock.* /ai, aa, ao/: ai.rón.ci *grandmother*, áa.ke.ri *it catches him*, máo.na *species of potato.* /oi, oe, oa, oo/: moi.há.ri *boiling*, no.min.ca.roém.pi *I will frighten you*, oá.rin.ci *roasted* (*meat*) noo.má.ro *my oar.* /e.ai/: an.ko.ye.ai.té.ro *we* (dual) *will go to harvest it.*

Any of the nonsyllabics may occur word or syllable initial and word medial, but only the nasals occur syllable final. None of the nonsyllabics occur syllable medial or word final. The only permitted consonant clusters are nasal plus stop or affricate. These are always homorganic and ambisyllabic. Examples: /m.p/: nom.pa.ši.té.ro *I will cover it.* /n.t: pi.ši.men.tó.ci *broom.* /ñ.tʸ/: ni.šíñ.tʸo *my daughter.* /n.k/: pan.kó.ci *house.* /n.c/: ka.mán.ci *cold* (*in the head*). /n.č/: in.čá.to *tree.*

SHORT KUTENAI TEXTS

PAUL GARVIN

GEORGETOWN UNIVERSITY

1. How the whites came to the Kutenais
2. The new car
3. How Abel St. Pierre "lost" his snowshoes
4. An incident at the sawmill
5. A day in school
6. Two flat tires in a day
7. The music dance

1. How the Whites Came to the Kutenais (told by Joe Stanley).

1. ne·ʔs qan ke·ʔwam suyape· qakiłne· ʔaqłsmaknikʔs: 2. "taxas naqaʔne· ʔałaknikʔnis. 3. qawsaqaʔne· łiʔnis kłwiłqaps wuʔus. 4. husiłłukqapkine·. 5. qake·ʔne·: 6. 'hincxałqakiłne· ʔaqłsmaknikʔ: 6. taxa·s qʔapiłʔinne· kamin. 7. hucqapsqaqaʔne· ʔałaknikʔnam. 8. qapsins qałwiy ka?s nʔaqanałkʔumnaqaqa ʔat'uxcałqsamumałne·. 9. c miqsa·n taxas cxałstapne· nasuʔkins.' " 10. taxas nʔukʔniłqankitciʔte· ʔaqłsmaknikʔ. 11. łihitiłne· niʔs ʔiłwatʔnaʔs. 12. qake·ʔne·: 13. "cxałqaqaʔne· ʔin'inya·qake·ʔke·. 14. hucukate· kincxa. 15. hucxałłitqʔałiłqʔakpame·k ʔin'inya·qakłapke·. 16. łuʔne· kamin kʔituqʔłiłqa·ł ya·qaqaʔke· ʔin ninko·. 17. miqsa·n naʔs nʔinne· kukniłwiyte ʔmo· c kaakiłwiy. 18. ʔis c nʔinne· kucmakʔ qapmo·. 19. hucxałqaqʔakpame·k ʔin'inya·qakłapke·. 20. ka?a huqałwiy ninko· c ka ʔat kucʔa·qałʔupxnamnała· ne· ʔat kuccxanaʔtis huya·kʔumnaqałxune·ʔke·." 21. qakiłiłne· ʔaqłsmaknikʔ: 22. "ʔat'incxanaʔte· ne· kiʔin kaʔiłwatʔna. 23. cxałwałaqaʔne· (cxałwałhaqaʔne·) taxas ʔat cxałʔisniłcxanatapne· qapsins. 24. taxas qake·ʔne· ʔaqłsmaknikʔ: 25. "suʔkne·. 26. taxas hucxałpiskine· kaʔamak ʔat kincʔìsniłʔitknikcap ke·ʔso·k qapsin. 27. taxas ʔukqna ne·ʔs ksiłqakiłił ʔaqłsmaknikʔ ʔat cxałyà·qałʔitkniłke· taxas nawickpame·k niʔs makcxaʔłwas qała·s makcxałʔitkinmał qapsins ke·ʔso·ks niʔs ʔamakʔe·s. 28. taxas kwałhaqa·ps suyape· ne·ʔs kʔukʔniłhakʔłanałʔitkinił kcmakʔiłqaʔins niʔs mayaqawickpame·ke· niʔs kcsùkiłʔitknikciłs taxas nʔa·qacnukpaya·ʔte· ne·ʔs make·ʔwa·s ne·ʔs hupa·ks maya·qakłapske·. 29. nʔukʔniłqałwiyne· xmakʔupxne·mał niʔs xmakcxana·t siłya·qakniłke· pikʔa·ks kcxałsiłkʔumnantił kcxałsiłqaʔuqunanike·ts niʔs mayàqakiłiłke· qo·ʔs pikʔaks ne·ʔs maksłqankitce·t niʔs mayà·qakiłiłke·. 30. taxas qake·kaxunakse· ne·ʔs taxa·s kqałwiy suyape·s kłsiłʔaqnica·ps. 31. qaʔupxne· taxas qała·s ʔat xmałiʔins niʔs ʔat kcxałqankitce·t kiʔcxa·s. 32. taxas qake·kaxunakse· ne·ʔs taxa·s łaqacuʔka·t ke·ʔcxa·s suyape·s ʔukqna ʔis c kʔaqakinił niʔs kqałwiy kłsiłʔaqnicił.

1. When/ maybe/ coming/ (the) white man/ he said/ (to) the Indians: 2. "Now/ there is/parents for you. 3. They stay/ beyond/ (the) big/ water. 4. I'm giving you their message. 5. She said (Queen Victoria): 6. 'You will tell/ (the) Indians: 7. Now/ everything is/ mine. 8. I will be like/ somebody's parents. 8. (If) something/ they want/ what(ever)/ they may be poor in/ precisely/ I shall help. 9. And/ but/ now/ they will have me for/ chief.' " 10. Then/ immediately believed/ (the) Indians. 11. Yes was said/ (to) the servant (of the Queen). 12. (The chief) said: 13. "Will be thus/ it/ the way you said. 14. I take/ your saying (word). 15. I shall never forget/ it/ the way you told us. 16. There isn't/ my/ what is written on/ the way there is like/ it/ yours. 17. But/ here/ is/ what I think with/ and/ my spirit. 18. This/ and/ is/ what I'm strong by. 19. I shall not forget/ it/ the way you told us. 20. Anywhere/ if I want you/ and/ where/ can we see one another/ (for) the/ precisely/ my telling you/ the way we are poorly off in something." 21. Was told/ (the) Indian: 22.

"Precisely/ you will tell/ the (one)/ who is/ my servant. 23. He will be near here/ then/ precisely/ he will tell me himself/ something. 24. Then/ said/ (the) Indian: 25. "It is good. 26. Then/ I shall let go of/ my land/ precisely/ (for) your doing for me yourself/ good/ something. 27. Then/ when/ then/ being told/ (the) Indians/ precisely/ the way they would be helped/ then/ they waited/ (for) the/ who was to come/ somebody/ they going to settle with/ something/ good/ (on) the/ their land. 28. Then/ being near/ white men/ then/ suddenly being acted differently/ it not being at all/ the/ way they expected it/ the/ good to be done to them/ then/ they remembered him/ the/ who had come/ the/ first time/ the way they had been told. 29. They immediately wanted/ to see each other with him/ then/ to tell him/ what had been done to them/ already/ them being about to be cheated/ them (the whites) not doing right by them/ (concerning) the/ way they had been told/ at that time/ long ago/ (about) the/ precisely/ way good would be done to them/ the/ their believing/ the/ way they were told. 30. Then/ it began/ the/ then/ they knowing/ (by the) white man/ they being lied to. 31. They didn't know/ then/ who/ precisely/ would be/ the (one)/ precisely/ they going to believe/ his saying (word). 32. Then/ it began/ the/ then/ they would not take again/ his saying (word)/ (of the) white man/ when/ it/ and/ being done/ the/ they thinking/ (themselves) being fooled.

2. The New Car (told by Simon Francis).

1. titqa·t? ʔa·kinqumłasnuqłe·xuna?te·t qanaxe· kqa·cmune· kqaqanałkqa·c. 2. ne· kqaqanałkqa·c łuqałà·tiłc?inakne·. 3. ne· titqa·t? kànułuqackin q?akpame·k ka?s mac?a·qakin ne·?s kqaqanałkqa·cs kcxałłaqac?ina·ks. 4. qa?upxne·. 5. qake·?ne· wó· wó·. 6. taxas n?akunkine· kànułuqàckinmułis. 7. pał sił?akunkine· kànułuqàckinmułis nis kqaqanałkqa·cs. 8. łuqałkine· nis kànułuqàckinmułis.

1. A man/ (of the) Tobacco Plains people/ went along/ was driving/ a car. 2. The/ car/ picked up speed. 3. The/ man/ who was driving/ forgot/ what/ he should do/ (so) the/ car/ would go less fast. 4. He didn't know. 5. He said/ whoa!/ whoa! 6. Then/ he pulled/ (the) reins. 7. Indeed/ he was pulling/ the reins/ (of) the/ car. 8. He pulled off/ the/ steering wheel.

3. How Abel St. Pierre "Lost" His Snowshoes (told by Simon Francis).

1. qawsaqa?ne· ʔa·pá·ł sa·pyá·ł to·xa· kcłumayits. 2. camna-qałe·kinmik cin qałwiyne· kcxałc?ìnał?itkak?o· kanmiyits. 3. qakiłne· tiłnamu?is ʔa·pá·ł: 4. "kanmiyit c hucwasił?uqnuxa?m-nała?ne·. 5. hucxałc?-inał?ìtkak?aniłne· naqsa·q." 6. taxas q?umne·?ne? ʔa·pá·ł. 7. c kkanmiyits c wiłnams ?uqnuxa?mne· tiłnamutmu ʔa·pá·ł. 8. taxas ?itkinłisne· ki?e·k ʔa·pá·ł. 9. taxas ?ikne· wiłnams ʔa·pá·ł. 10. taxas kuł?ik ʔa·pá·ł wilnams c taxas c?inaxe·. 11. cukate· ?a·ka·k?u?is c t?awu?is c ?ak?a-qayt?e·s. 12. taxas kc?inam c?inałhucinqa·ce· ?a·kuq?-yo·li?its. 13. qa·nałatiyqa·ce·. 14. c taxas c kiwxam taxas c c?inał?itka-k?u?ne·. 15. qa·nał?ìtqanimxùniłkak?uniłik ?a·pá·ł ?a·-kink?à-qłałałi?its. 16. ?à·kaminqa·ce· ne·?s a·kink?àqłałałi?its. 17. taxas ?ilnaha·ks kła?ìtqanimxò·niłkak?uniłik ?a·pá·ł. 18. nukłukne· c qałwiyne· kcaq?małsła·tłan-qamik (kcaq?małsłà·tiłhan-qamik). 19. taxas qà·hawsaqa?ne· ?a·pá·ł. 20. taxas kwo·-nike·ts c qałwiyne· taxa·s. 21. taxas łac?-inaxe· ła·qa·naxe· ?a·pá·ł. 22. ła·qanaxe· c łaxaxe· ?akuqłałałi?its. 23. yaq- li?itse·. 24. qa·wisqa?ne· c qałwiyne·: 25. "qałâqna'-właqànał?ałqanam mika kyaqli?it." 26. taxas łac?ìnał?unaxe·. 27. taxas kła?unam kła?ałqanam taxas łac?inałhucinqa·ce·. 28. to·xa łayo·xaxe· qà·c?ła·nxunakse· wit?ic?-ła·nxunakse·. 29. pał qà·c?ła?nxunake·s c qa?inse· ni?s xmakqànałłaq?iya·kxa·m. 30. taxas ni?s qanałła?akaminqa·ce·. 31. taxas kłà?akaminqa·c ni?s a·kic?ła?nxunake·s taxas łac?inałucinqa·ce·. 32. qà-wułi?itse·. 33. taxas kła?iwxa·m yaqà·łłałitłuske· pał

kuklo·k taxas n?isaknune·. 34. qa·nqamik (qa·hanqamik) c?in?upxne· pàł łałitłuse· ni?s łayaxa·?s. 35. pał q?apiłłałitłuse·. 36. qo·?s ?ume·s łaqà·kxałłałuse·. 37. qałwiyne·: 38. "hułłukin (qałwiyn'o·łłukin) kaak?aqayt tàxta'wła?unam qo· ya·qàkxałła·luke· (ya·qakxałła·hałuke·). 39. taxta kucxałłà·?itikniłe·k." 40. taxas ła?uwukne· ?a·pá·ł. 41. ce·kate· ?a·k?aqayt?e·skcxałłacu?ka·t. 42. lu?se· ni?s a·k?aqayt?is. 43. qałwiyne·: 44. "mo·qałwiyne· nas kuqo·qawxake·n c kłqaqaqa·. 45. qo· mo·ya·kił?itkak?u?ke· ?iłnaha·kqo·?s kułqa·kiłłukin taxas hułskiłłàc?qałq?akpame·k. 46. mika· ksiłtuk?anuqka· c hułłacinyaxa· kaak?a·qayt." 47. taxas lac?inaxe· łac?inał?ic?kiłne· ?a·k?aqayt?e·s ?a·pá·ł. 48. ne·?s ak?ałuki?is ła?a·qapnaxe· łaqa·naxe·. 49. kłałaxam ni?s a·kuqłałali?its łac?inał?unaxe·. 50. kłałaxam ní?s ?a·kic?ła?nxunake·s ní?s łaqà·ł?akaminłikne·. 51. pał ni?s kłukałła?unam qałwiyne·: 52. "n'o·łqawxałyuxaqno·na a·kic?łanxu?me·k kucxałła?ùnmitikimik." 53. taxas yuxaqnune· né·?s ?a·kic?ła?nxunake·s. 54. taxas ła?ùnmitikimik. 55. qâhak?àmawisnuxunxune· ?a·pá·ł. 56. pał siłcink?use· ?a·k?a-qayt?is. 57. sawisnaxunxune· łakusqawisnaxunxune·. 58. qa·?àło·qaqnane·. 59. ce·kate· qapsins siłaqawisnuxunxo·. 60. taxas n?upxne· ?a·k?aqayt·?is pał siłcink?use·. 61. qałwiyne·: 62. "mika kuhukło·k huł?akunxa?m. 63. kucyamasinxam napit huta?qna taxas hukunyaxa· ne·? kaa·k?aqayt taxas kucxał?akunke·n kucłałuke·n." 64. taxas ?akunxa?mne· ?a·pá·ł kcxałyamasinxa?m. 65. tâxas pał cxałtaqnane·. 66. taxas yamasinxa?mne·. 67. taxas wukine· ?a·k?aqayt?is. 68. taxas ?akunkine· wa·ł?akun-kine·. 69. qatakine·. 70. taxas cmak?ił?akunxa?mne· k?akunkin. 71. taxas łałukine·. 72. taxas kłałukin ?unaxune· ?a·pá·ł. 73. qo·?s ?úmis ?akuqłałali?its kawaxmuxune· ?a·pá·ł. 74. kcinxu?mik ?a·pá·ł qasakił?upxne· pał qáqałatił-hawicikine· ?a·k?aqayt?is. 75. qasakił?upxne· pał siławukqne· ?a·k?aqayt?is. 76. ?is c kcmak?ła·psł?ic?kił ?a·k?aqyat?is pał słâtwicikine· ni?s a·k?aqayt?e·s ni?s c kła·tł?ic?kiłke·.

1. Was somewhere/ Abel/ St. Pierre/ almost/ it being spring. 2. He had little to do/ so just/ he thought/ he would set a trapline/ the next day. 3. Said/ (to) his wife/ Abel: 4. "Tomorrow/ and/ we will get up early. 5. I shall go out trapping/ marten." 6. Then/ slept/ Abel. 7. And/ being the next day/ and/ early/ got up/ his wife and himself/ Abel. 8. Then/ was made/ food/ (for) Abel. 9. Then/ ate/ early/ Abel. 10. Then/ having finished eating/ Abel/ early/ and/ then/ he started out. 11. He looked for/ his traps/ and/ his gun/ and/ his snowshoes. 12. Then/ having started out/ he started to climb up/ the mountain. 13. He went along. 14. And/ then/ and/ having come up/ then/ and/ he started setting his traps. 15. On his way set his traps/ Abel/ on the ridge around the draw. 16. He circled around/ the/ ridge around the draw. 17. Then/ for the last time/ again set a trap/ Abel. 18. He got tired/ and/ he thought/ he would sit for a while. 19. Then/ stayed there/ Abel. 20. Then/ a while having passed/ and/ he thought/ that's all. 21. Then/ started back/ was going along back/ Abel. 22. He was going along back/ and/ he reached again/ a gulch/. 23. It was steep. 24. He stood there/ and/ he thought: 25. "It would be better for me to go right across/ although/ it is steep." 26. Then/ he started down again. 27. Then/ having come down/ having gone across/ then/ he started going up again. 28. Almost/ he had come up again/ there was a tree lying there/ there was a high tree lying. 29. Indeed/ the tree lying there/ and/ it wasn't (possible)/ here/ climbing along over it. 30. Then/ here/ he went along around it again. 31. Then/ having gone around again/ the/ tree lying there/ then/ he went up again. 32. It wasn't far. 33. Then/ having moved up again/ where there was no more snow/ indeed/ being tired/ then/ he sat down. 34. He was sitting there/ he started to see/ indeed/ there was no

more snow/ (on) the/ sidehills. 35. Indeed/ there was no snow at all. 36. There/ below/ there was some more snow. 37. He thought: 38. "I should take off/ my snowshoes/ till/ I go down again/ there/ where there is more snow. 39. Till/ I shall put my snowshoes on again." 40. Then/ got up again/ Abel. 41. He looked for/ his snowshoes/ wanting to pick them up. 42. They weren't there/ the/ his snowshoes. 43. He thought: 44. "I thought/ here/ me putting it/ and/ it not being here. 45. There/ where I did set my trap last/ there/ I must have taken them off/ then/ I forgot them there. 46. Even/ being very late now/ and/ I should fetch/ my snowshoes. 47. Then started back/ went back to look for/ his snowshoes/ Abel. 48. The/ his track on the snow/ he followed back/ he went along back. 49. Arriving again/ (at) the/ draw/ he started going down again. 50. Arriving again/ (at) the/ tree lying there/ here/ his track went back around it. 51. Indeed/ (on) the/ going back down/ he thought: 52. "Here/ I should step on/ this/ tree lying here/ getting ready to jump down again." 53. Then/ he stepped on/ the/ tree lying there. 54. Then/ he jumped down again. 55. Suddenly was hanging there upside down/ Abel. 56. Indeed/ were caught there/ his snowshoes. 57. He was hanging there/ he was hanging upside down. 58. He didn't know what to do. 59. He looked/ why/ he was hanging down. 60. Then/ he saw/ his snowshoes/ indeed/ were caught. 61. He thought: 62. "Even/ I being tired/ I should pull myself (up). 63. Bending myself upward if/ I can make it/ then/ I can reach with my hand/ the/ my snowshoes/ then/ pulling them/ taking them off again." 64. Then/ pulled/ Abel/ bending himself upward. 65. Then/ indeed/ he would make it. 66. Then/ he bent himself upward. 67. Then/ he touched/ his snowshoe. 68. Then/ he pulled it/ he pulled it upward. 69. He couldn't make it. 70. Then/ he pulled it with all his strength/ pulling it. 71. Then/ he pulled it off again. 72. Then/ pulling it off again/ fell down Abel. 73. There/ below/ (in) the draw/ landed/ Abel. 74. (When) landing/ Abel/ then knew/ indeed/ he still had on his feet/ his snowshoes. 75. Then he knew/ indeed/ he had found again/ his snowshoes. 76. This/ and/ him very much looking for/ his snowshoes/ indeed/ he had on his foot all along/ the/ his snowshoes/ this/ and/ when he was looking for them.

4. An Incident at the Sawmill (told by Nick Francis).

1. huqâkił?itkine· qapsin ya·kiłcikkuc?-łaniłiłke·. 2. k?o·kunmiyits łaxaxe· k?uk?e·-titqa·t? siłnukne· k?itkinłis. 3. qa·łan qał-wiynamne· titqa·t? kcxał?in k?itqana?qa·kcìkkuc?łaniłc·s. 4. taxas n?itkine· qsà-munałapne·. 5. to·xa kcyukyits qakłapne·: 6. "taxas kukło·k." 7. huqakiłne·: 8. "qa?-inne· kukò·qaqnawała·. 9. łaqawunikitne· taxas kcyukyit." 10. qanta· taxas yukyitne· hułac?inaxała?ne· kułłałaxaxała· ?at ya·kił-yukyitmumuka?ke·. 11. taxas hun?iknała?-ne·. 12. kuhò·ł?iknała· n?itxu?me·k qak-łapne·: 13. "hucqà·nmiłq?umne·?ne· nà·qaskiłłaxakqate· k?uk?e nata·nik?nana. 14. hincxałłàhaq?nukałknapne· (hincxałłàq?-nukałknapne·)." 15. taxas q?umne·?ne· qâł-nuqàsinuwunikitse·. 16. taxas hunàq?nukał-kine· huqakiłne·: 17. "taxas łaxakqate·?ne·." 18. taxas ławanxa?mne· kcìkkuc?łaniłmo·ł. 19. huqâkił?ìtqanaqanała?ne· kcikkuc?ła·-niłe·ł kqayaqànała·tiqa·c kqałsa natanik?-nana. 20. qakłapne·: 21. "taxas kukło·k." 22. huqakiłne·: 23. "?at qàqałqaqa?ne· ni?s taxta· titqa·t? sł?i?itkin n?isi·kni?ne·. 24. huqakiłne·: 25. taxas ma·c ła·?ìsił?it-kinin. 26. taxas hucxał?isniłq?à·pił?itkine· sa?n pał kucumniyat." 27. taxas n?uk?nił-xałqanqa?ne· ?a·kissaq?e·s. 28. ?unaxune· ne·?s huya·qa·wickuqno·małke·. 29. huci?-kate· sanqame·k. 30. huqakiłne· kwanxa?-mce·t kcikkuc?łaniłmułis xmakàq?mał?it-wusqa· kqo·qał?ìtwumłaye·ko·s minic kcàq-?malhakłikłuks na?s kaa·kinmałka·mił kslqa·qasnaknaps. 31. n?ìtwusqapci?te· ne·?s k?itkinmułis qapsins. 32. huqâqwała?ne· qa·łin qàsinuwunikitse·. 33. qakłapne·: 34.

"taxas kqa·nmiłxu?ne·." 35. taxas ławanxa?-mne· kcìkkuc?łaniłmo·ł. 36. taxas n?ô·psł-łaqaqo·qaqa?ne·. 37. taxas kqa·qaskinił k?itkinił qapsin taxas huła?ùqo·xaxa?mna-ła?ne·. 38. ?ukqna słuqał?isiłhukło·k cin qanła?ùquxaxa?mne· ne·?s kqaqanałkqa·cs. 39. taxas c?inminuxunqa?ne· kuqa·cmunała·. 39a. tax ne· kaa·kinmałka· ła?unaxune· ne·?s qałłakusqaninmuxune· słwùłłuxuna-titmune· ?a·kinqo·?myu?is. 40. yaqe·łłukxu?-me·k. 41. n?itwisqa?ne· ne· kqaqanałkqa·c. 42. huqawxaxała?isne· huła?ùwo·knała?ne·. 43. qawa·kaxe· nasukinnam ci?kate· qakiłne·: 44. "kin?upiłe·k." 45. qake·?ne· na titqa·t?: 46. "huqałwiyne· hułinsł?upiłe·k." 47. qakłapse· ne·?s nasukinamis: 48. "ka?a kin?-aqàwxał?upiłik." 49. qake·?ne· 50. "huqał-wiyne· kaa·kła·t?." 51. qakłapse· ne·?s nasukinamis kł?iktkałat?. 52. qàtałwan-łat?ne·. 53. qakłapse·: 54. "qô·?usmikqaw-xał?uqo·xa?min (qahu?usmikqawxał?uqo·-xa?min). 55. hucc?inaxała?isne· k?àwumu-tiłka·."

1. I was once doing/ something (= I was working)/ (in) a sawmill. 2. Being one day/ came there/ one/ man/ he was looking for/ what is being done (= a job). 3. Some-body/ people wanted/ a man/ who would be/ who piles up/ lumber. 4. Then/ he did it/ he helped me. 5 Almost/ going to be noon/ he told me: 6. "Now/ I being tired." 7. I told him: 8. "There isn't/ we having something to do. 9. It won't be long again/ then/ going to be noon." 10. When/ then/ it was noon/ we started back/ we who got back there/ precisely/ where there was noon meal. 11. Then/ we ate. 12. We having finished eating/ he lay down/ he told me: 13. "I'll sleep for a while/ till the clock reaches/ one/ o'clock. 14. You will wake me up again." 15. Then/ he slept/ it was not a long while. 16. Then/ I woke him up/ I told him: 17. "Now/ it is time." 18. Then/ started to run again/ the sawmill. 19. We were piling up/ lumber/ it passing/ three/ o'clock. 20. He told me: 21. "Now/ I being tired." 22. I told him: 23. "Precisely/ it happens/ (to) the/ very/ man/ would be doing/ is working hard." 24. I told him: 25. "Now/ don't work too much again. 26. Now/ I shall do all myself/ but/ indeed/ being used to it. 27. Then/ suddenly were cramped/ both his legs. 28. He fell down/ (from) the/ where I was standing with him. 29. I looked/ he was sitting down. 30. I told/ him who runs/ the sawmill/ could he stop for a while/ about fifteen/ minutes/ going to rest for a while/ the/ my partner/ it being all he can do. 31. He made stop/ the/ what was being done with/ something. 32. We were there/ about/ not a long time. 33. He told me: 34. "Now/ he feeling some-what better." 35. Now/ started again/ the sawmill. 36. Then/ all the time again nothing happened. 37. Then/ being quit/ what was being done/ something/ then/ we again got into (the truck). 38. When/ he was really tired/ just/ he sat down inside/ the/ car (truck). 39. Then/ started going/ the/ what we traveled with. 39a. So/ the/ my partner/ fell off again/ here/ he fell head first/ he landed with/ his shoulder. 40. He broke his shoulder bone. 41. Stopped/ the/ car. 42. We walked over/ we helped him up. 43. There came/ the boss/ he looked/ he said to him: 44. "Did you get hurt?" 45. Said/ the/ man: 46. "I think/ I am probably hurt." 47. He was told/ (by) the/ foreman: 48. "Where/ are you hurt?" He said: "I think/ my arms." 51. He was told/ (by) the/ boss/ he should raise his arm. 52. He couldn't move his arms. 53. He was told: 54. "Get in there up front. 55. We shall go to/ a doctor."

5. A Day in School (told by Catherine Jackson).

1. kłunqahakqnuk qawsaqapnałapne· ?ał-ka?aknik?. 2. ?at huqake·kaxe· huci?kat k?ituq?łiłqa·ł. 3. ?at huyanqame·k kqał-łaxa·łcin ?a·qa·nmiyit. 4. k?o·kunmiyit huc-?kaxe· c huwaxe· ?a·q?ankme· ?at huqà·-kiłci?kate· k?ituq?łiłqa·ł. 5. taxas kuci?kat k?ituq?łiłqa·ł c taxas kwałkwayit kxa·ca natanik?nana taxas lac?inaxe·. 6. c huła?àł-qanakułne· ni?s yà·qawisqa?ke· kuyan-.

qamik. 7. huqałwiyne· kucłayo·xał?isaknu. 8. naq?ma?ne· ne· kqałłaxa·łcin. 9. łac?inałmatapne·. 10. pik?ak cilmiyitne·. 11. kułałaxam c hunukłukne·. 12. taxas ni?s kułaqałaxamił ni?s kłałaxam ne· kuyanqame·k c taxas kama c?inał?ickłapne·. 13. qałwiyne· kuł?ipmił. 14. taxas to·xa kułałaxam hunułpałne· kama kaqankłap. 15. hunaqankiłne·. 16. c taxas huła?upxne·małne·. 17. so·kiłk?ukne· ni?s kła?upxna·p.

1. Being in the middle of the lake/ stayed there with me/ my folks. 2. Precisely/ I came from there/ I should look at/ what is written (= go to school). 3. Precisely/ I was sitting on/ a horse/ every day. 4. Being one day/ I started out here/ and/ I arrived/ (at) Bonner's Ferry Mission/ precisely/ there I was looking at/ what is written. 5. Then/ having looked at/ what is written/ and/ then/ being evening/ being four/ o'clock/ then/ I went back. 6. And/ I went across the water/ (to) the/ where was standing/ what I sit on (= my horse). 7. I thought/ me going to mount it. 8. Got scared/ the/ horse. 9. It went and left me back. Then/ I started back on foot. 10. Already/ it was night. 11. Having come back/ and/ I was tired. 12. Then/ (at) the/ me not coming back/ the/ coming back/ the/ what I sit on/ and/ then/ my mother/ went out to look for me. 13. She thought/ me being dead. 14. Then/ almost/ having come back/ I heard/ my mother/ calling me. 15. I called her. 16. And/ then/ I saw myself with her. 17. She was glad/ (at) the/ seeing me again.

6. Two Flat Tires in a Day (told by Catherine Jackson).

1. wałkwa wiłnam huc?inaxała?ne·. 2. hułac?inyaxnała?isne· qapsin?is ca·n qàkiłya·qà·kił?itkinke· qapsins naqan kqo·qał?itwumła?as k?upci?tił. 3. tax ne· ya·qakxałya·qłi?itke· qa·kiłpaq?miłumimunawasne· c huła?ìtkinała?ne·. 4. kuła·huknała· c taxas huc?inałhucinqa·cała?ne·. 5. ?at qàwułi?itne· ?at nànmikuku?ne· c ?at hułaqanakułnała?ne· wu?u. 6. naqan kqo·qałye·ko·łak?inmisa huqsaq?ałiłqanakułnała?ne·. 7. c kuyo·xaxała· taxas hułacukatała?ne· ne· qapsin. 8. c taxas kułac?kał?o·kaxała· hun?o·psłłaqaqanqkułnała?ne· c kuła?ukaxała· naqan kqo·qałqayaqawo· natanik?nana c kuła?ukaxała·. 9. taxas kułac?kaxała· ne· ya·qà·nitła·namke ya·kił?àkułłiyamke· c hun?akułłiyała?ne· ku?iknała. 10. c taxas hułac?kaxała?ne· naqan kqo·qałqayaqawo· k?upci?tił hułaqasł?iłqakaxała?ne· c huqawaqał?ìtwusqawła?ne·. 11. taxas hun?iknała?ne· c kuhuł?iknała c taxas mo·cłac?kaxała?ne·. 12. c ła·psiłpaq?miłumine·. 13. huła?ìtkinała?ne·. 14. taxas kułahuknała taxas hułac?kaxała?ne· ?o·psłłaqaqo·qaqa?ne·. 15. c kuławaxała· ?a·kikło·?nam c'uqo·naxała?ne· ya·qa·kqa·ke· k?ituq?ìiłqa·ł. 16. c łu?ne· kamnała· k?ituq?ìiłqa·ł. 17. c taxas łakaxała?ne· ?a·q?ankme·. 18. c taxas ławaxała?ne·.

1. Yesterday/ morning/ we started out. 2. We went to get back/ his something/ John('s)/ where he was doing/ something (= working)/ approximately/ being about twelve/ miles (from here). 3. So/ the/ where the steep place is/ it burst with us (= we had a flat tire)/ and/ we fixed it again. 4. Being finished/ and/ then/ we went up. 5. Precisely/ it is not very far/ precisely/ (the motor) is boiling/ and/ precisely/ we pour in/ water. 6. Approximately/ being about five or six (quarts)/ we poured in some amount. 7. And/ getting up there/ then/ we took/ the/ something. 8. And/ then/ coming down/ we didn't pour in any more (water)/ and/ coming down/ approximately/ being about half/ an hour/ and/ coming down. 9. Then/ coming back/ here/ where the houses are/ where people buy things/ and/ we bought/ what we ate. 10. And/ then/ we started back here/ approximately/ being about half/ a mile/ we went out that far again/ and/ we stopped there. 11. Then/ we ate/ and/ having eaten/ and/ then/ we did start back here again. 12. And/ it burst again (= we had another flat tire). 13. We fixed it again. 14. Then/ having fixed it/ then/ we came back here

again/ there was nothing there any more (= everything was O.K.). 15. And/ having come back/ (to) town/ and/ we went into/ where lies/ what is written on (= post office). 16. And/ there wasn't/ (for) us/ what is written on (= letter). 17. And/ then/ we came back here/ (to) Bonners Ferry Mission. 18. And/ then/ we had come back again.

7. The Music Dance (told by Catherine Jackson).

1. naqan kqo·qał?itwunmakut ?at'uc?-inaxe· kamaqawo·ke·. 2. ?at ?itkinitne· ksuyapaqwiłnam. 3. ?at hun?ałq?ałkiłq?-ante·k ?at'usuyapaqwiłmałne· piyá·ł ?ant-łín. 4. c taxas qayaqawo· kcitmiyit ?atn?-ikitne·. 5. c nuł?ikił taxas ?at łaqwiłnamne·. 6. tax ne· huc?inaxała· ?at hun?asmał-ne· niyás kwiłła?m. 7. taxas ?at'usitc?inał-suyapaqwiłnała?ne·. 8. c taxas ne· huławaxa-ła· ?a·k?ankme· taxas ne· ?aqłsmaknik? ?at ?umacnatawasne· ne·?s kqo·qanałsuya-paq-wiłnała?is.

1. Approximately/ being about ten years (ago)/ precisely/ I started out to/ Cranbrook Mission. 2. Precisely/ was made/ people dancing white man's dance (= music dance). 3. Precisely/ I went like they did/ precisely/ I danced white man's dance with/ Pete/ Andrew. 4. And/ then/ half/ being night (= at midnight)/ precisely/ was eaten (food). 5. And/ it being eaten/ then/ precisely/ people danced again. 6. So/ the/ when we went/ I was two with/ Ignatius/ Bighead. 7. Then/ precisely/ we were going to white man's dances. 8. And/ then/ then/ when we came back/ (to) Bonners Ferry Mission/ then/ the/ Indians/ precisely/ laughed at us/ (over) the/ us going there to white man's dances.

AN OBJECTIVE PSYCHOLOGY OF GRAMMAR. By J. R. Kantor. Bloomington, Indiana: The Principia Press, Inc., 1952. xvi + 344 pp.

The present volume was first published in 1936 and is now reissued, without change, because of 'a continuing demand for the book'. (p. vii) It is divided into three parts. Part I opens with a chapter entitled, Why an Objective Psychology of Grammar? The field of psychological grammar is discussed in the next two chapters, followed by one brief chapter presenting the historical relations between linguistics and psychology, and by two more chapters explaining the concepts of objective psychology as applied to grammar. Part II takes up the fourfold organization of grammar, namely semantics, syntax, morphology, and phonology. Each chapter in Part III investigates one of the fundamental grammatical categories: parts of speech, person, gender, case, tense, number, voice, mood, direct and indirect speech, negation.

Most of the chapters deal with a grammatical problem by contrasting the views of linguists with the more realistic approach that an objective psychologist would take. Sterility has resulted from the treatment of these problems by linguists—or 'grammarians', as Kantor prefers to call them—from Plato to Malinowski. The author plays no favorites, for Boas, Sapir, and Bloomfield come in for their equal share of drubbing. All linguists seem to have been obsessed with defining a 'thing-language' and with classifying 'symbol-things', 'dead ashes, little hinting at the bright and warming blaze which is speech' (p. 17). The corrective is to employ an objective organismic psychology to determine 'how language adaptations are actually carried out' (p. 32). The key lies in the recognition of the triadic nature of the linguistic event: the behavior (A) of a speaker or gesturer is a response, on the one hand, to the auxiliary stimulus (B) of the person addressed and, on the other, to the adjustmental stimulus (C) of the object referred to. Several diagrams portray this conception (pp. 73–75).

The reviewer must confess to a disappointed and frustrated response toward this book. For all of Kantor's vigorous lambasting of grammarians, he seems to be taken in by their classifications and categories. After attacking their rigid conception of parts of speech, he goes on to analyze language situations psychologically in terms of substantive adjustment, adjectival reference, verbal utterance, adverbial speech, prepositional speech factors—these being usually 'interrelated with adjustment stimuli' (pp. 185 ff). Conjunctival speech, he believes, is more closely connected with the speaker and his personality (p. 190). It is disappointing, too, to find that the key to an understanding of language behavior is to be sought in another speech-situation diagram, which, though as plausible as the dozens of other such diagrams, is no more successful in contributing to the solution of concrete problems. Kantor's solutions are always in the nature of broad indeterminate generalizations, or they are left unstated. Thus, on page 197 he writes: 'Though it is impossible for the grammarian to say what parts of speech such utterances as *gimme* and *yubetcha* are, the psychologist has no trouble in dealing with them at all'. Here he suddenly ends one section of a chapter and passes on to another, leaving the baffled reader unenlightened.

Throughout the book Kantor holds out the confident promise that his key will open up new linguistic vistas. Because of the vivid and energetic style in which the book is written, the reader can almost hear the tantalizing sound of the key being

inserted and the lock being turned. But, somehow, the door never swings open to reveal the promised land.

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THE LANGUAGE OF THE PAPAGO OF ARIZONA. By J. Alden Mason. Philadelphia: The University Museum, 1950. iv + 84 pp.

This is one of the few modern works on a language of the well known but scantily described Uto-Aztecan family. It deserves double appreciation for its contribution in a field where studies have had to be made from reports of travelers and priests, and also for the author's tenacity over a period of years in organizing the materials for publication. One wonders how much valuable data has been collected by other investigators but never published for lack of persistence or loss of interest.

As explained in the introduction, most of the data were gathered before 1919, but the manuscript was not completed until 1941. This accounts for the quasi-phonetic recording which appears in place of the phonemicized alphabet we might expect in a 1950 publication. Naturally the three decades of delay in preparing the materials and in waiting for publication have seen advances in the field of linguistics that make the reader wish Mason's work could have seen the light of day at an earlier date.

The main divisions of the monograph are: The Papago and Their Language (a brief summary of Papago dialects and the relationships of Papago to other Uto-Aztecan languages; two pages), Phonology (eight pages), Homonyms (one page), Morphology (54 pages), Summary (one page), Specimen Text (six pages), Comparative Table of Morphological Elements (listing cognate and/or semantically equivalent forms of Papago affixes with Pima and Tepecano; three pages). Although the grammatical materials form a large part of the monograph, the comments in this review will be limited mainly to the phonology.

The reviewer attempted to work out the phonemes of Papago from the phonetic data given and found surd stops[1] /p, t, k, ʔ/, sonant stops /b, d, g/, sibilants /s, š/ (Mason writes c for the latter), nasals /m, n/, retroflex /l/,[2] semivowels /w, y, h/, high vowels /i, ə, u/, low vowels /a, o/. The chief difference between this notation and the author's is that the alveolar groups t-tc, d-dj, n-ñ, l-ḍ-ṭ, and the bilabial group w-v are combined into /t, d, n, l/ and /w/ respectively on the basis of the author's statements of mutually exclusive distributions on pages 9–11. (Difficulties introduced in this analysis by an equivocal paragraph on page 12 will be considered later.) Unvoiced variants of consonants and vowels, pre- and post-aspiration of surd consonants, and pre-glottalization of sonant consonants are all automatic and could have been covered in general statements.

Three phonemic junctures seem to be distinguishable. Final juncture /./ is actualized as unvoicing of the preceding syllable. A medial juncture / ✱ / is distinguished by the occurrence of two consonants that would constitute a non-permitted cluster—one which has a sonant as its second member—but with an 'epenthetic' vowel inserted between them, usually i after alveolar consonants, ə after others. However, because final vowels were not always recorded (p. 10), and because the epenthetic vowel is not always i or ə, it is entirely possible that utterance-medial voicing of a vowel that was unrecorded elsewhere because of proximity to final juncture has given the effect of an epenthetic vowel. In this case it would not be necessary to postulate medial juncture. Close juncture, not symbolized,

[1] Perhaps the distinction in the stop series should be lenis—fortis rather than surd—sonant. In this review, the reviewer's orthography is given between slant lines to distinguish it from Mason's. Effort is made to keep as close to Mason's terminology as possible. Morpheme boundaries are indicated by a hyphen.

[2] Or /r/. The choice, as in most Uto-Aztecan languages, is a matter of esthetics.

is the normal manner of transition between phonemes in sequence.

Preceding either final juncture or a surd consonant the author differentiates a vowel ending in aspiration from a fully unvoiced vowel. Because of the statement (p. 7) that 'vowels are partly unvoiced when the second member of a diphthong in final position', it is possible that a post-aspirated vowel could be phonemically a geminate cluster, while a totally unvoiced vowel would be a single vowel. The unvoicing would then depend on the environment.

Pitch is said to be a distinguishing feature for 'stems that are otherwise homonymous, especially in the shortened punctual forms of verb stems' (p. 7). It is possible here, as in Huichol, that pitch is determined by combinations of length and stress which are not immediately apparent; sufficient data are not presented to settle the question.

The phonemic problems it would be most interesting to know more about revolve mainly around the omission of final unvoiced vowels. Medial juncture has already been cited as one problem. The distribution of alveolar consonants poses another. On page 12 the author states (emphasis added):

> Certain Papago stems end in consonants that normally vary according to the following vowel, such as *l* and *ḍ*, *c* and *s*, *t* and *tc*, *d* and *dj*. The determining vowel is of course missing. That the final consonant was determined by such a lost final vowel is shown by comparison with words in the Northern Tepehuan language, where the final vowels are retained in sonant form. THE FINAL PAPAGO CONSONANTS ARE OF COURSE INVARIABLE AND ARE NOT CHANGED TO AGREE WITH ANY NEW VOWEL THAT MAY BE ADDED IN COMPOSITION OR GRAMMATICAL DYNAMICS.

Judging from the cited forms ta'taLI /tatali/ *uncle* and ma'ṭ /mal/ *child*, the presence or absence of an unnoticed final vowel may in all cases be sufficient to explain the phonetic difference. At any rate, none of the forms cited contains any 'new vowel', or any other means for checking up on the invariability of the consonants mentioned with the exception of /š/ and /s/, which have already shown themselves to be separate by contrast in initial position such as between cegoɪ /šəgoi/ *greasewood* and se-gewe'k /səgəwək/ *strong*. If, however, the statement was made on the basis of data not presented, two new phonemes /č/ and /ǰ/ might have to be added to the list.

Some of the morphological classes may have been set up on semantic rather than formal criteria. The actual criteria used are not given even for major morpheme classes. This may be the reason, for example, why the prefix s- is listed as prefixes 27, 28, 76, and 102, though in each case the 'meaning' is roughly similar to the rest, the difference being that the s- is prefixed to so-called 'nouns', 'verbs', and 'adjectives' respectively. The relative order of verbal elements is not clear, and the frequently mentioned 'clitics' are undefined. Discussions of individual affixes, which occupy around half the monograph, give a fair idea of the structure even though the presentation is not organized in terms of affix classes based on distribution as far as it is possible to ascertain.

The author does not discuss syntax or limits of morphological constructions, though he assumes the latter. He does maintain that 'the distinction between words and phrases is a difficult one, but nominal incorporation is found only by academic sophistry'. Since abbreviated forms of adverbs sometimes 'are placed before the verb stem and form part of the verbal complex' (p. 64), but their relation to the verb is only vaguely stated (pp. 42, 46), we are left free to wonder if adverbs might not really be incorporated into the verb structure. Form 44 in the specimen text /kutp-ab-oo-st-ho?igə?i-dam-?əə-taatam./ *and maybe—thus—will—to us—sympathizer—himself—feel* (*and maybe he will sympathize with us*) gives us room to wonder still further.

/ho?igə?i-dam/ *sympathizer* is a noun formed from a verb stem plus /-dam/, a nominalizer. It precedes a reflexive /?əə/ which immediately precedes the main stem. The form appears to be structurally almost parallel to Huichol ni-ukúuku-ri-mĩ-ni *affirmative—completive—burn (like chile)—nominalizer—die—affirmative* or *he got burned by chile* (literally: *he chile—died*). kuukú-ri is a verbal noun *chile* and is incorporated into the verb. Cognate forms of course prove nothing, but at any rate it does not appear to the reviewer, who may be indulging in 'academic sophistry', that Mason's data and analysis fully support his view on incorporation, especially since he defines neither terms nor criteria.

The data in Mason's grammar will be very useful for comparative analysis, but the phonetics would be much more useful if they were organized around the phonemic structure of the language, discussing patterns of variation rather than random variations. For example, a comparative study of palatalization of alveolars in the whole Piman group should yield information on the processes of linguistic change at work in those languages, yet Mason makes no comment on the parallel patterning of the similarly conditioned sets of variants of the whole Papago alveolar series. The fact that l, ḍ, and ṭ are positional variants of one phoneme makes it unnecessary, at least for Papago, to assume more than one */r/ or */l/ for proto Uto-Aztecan. The use of the symbol e for the high back vowel is confusing, but Mason himself has already[3] changed it to ə.

Reference must also be made to Juan Dolores' published lists and Mason's Tepecano grammar,[4] which the Papago grammar supplements but is not intended to replace. Lists available in the other four companion publications are not duplicated. A list of 'adjectival' stems is included.

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[3] J. Alden Mason. Some Initial Phones and Combinations in Utaztecan Stems. IJAL 18.9–11, 1952.

[4] See footnotes 1 and 2 of the work under review.

NAMES: JOURNAL OF THE AMERICAN NAME SOCIETY. Vol. I, no. 1, March, 1953. Edited by Erwin G. Gudde. Published quarterly by the University of California Press (Berkeley and Los Angeles) for the American Name Society. Subscription (with Society membership) $5.00 per annum.

NAMES, according to the editor 'is devoted to the dissemination of the results of study and research in the etymology, origin, meaning, and application of all classes of names—geographical, personal, scientific, commercial, popular'. It will publish 'general, regional, and topical articles as well as the results of specialized research in the fields of onomatology. Contributions of non-members of the Society will be accepted if space permits'.

The first issue contains eight articles: Madison S. Beeler, America—The Story of a Name (1–14), Marshall Smelser, Poets and Place Names (15–19), Robert L. Ramsey Irish Pioneer Onomatologists (20–29), Demetrius J. Georgacas, Slavic Names on Cyprus (30–31), Aileen E. Bonestell, Bacteriological Nomenclature (32–34), David Allen Stein, Los Angeles: A Noble Fight Nobly Lost (35–38), Carl M. Weisman, Brooklyn from *Breukelen* and *Bruijkleen* (39–40), and Erwin G. Gudde, Names and Trains (41–47). There is as well a collection of brief notes on names (Names in Brief, by various authors, 48–51), a section called News, Comments, and Queries (52–56), a Book Reviews section (57–67), and ANS Notes (68–71).

The articles in this issue are, for the most part, brief and popular in style, in consonance, presumably, with one of the Society's purposes, 'to make the American people conscious of the interest and importance of names in all fields of human

endeavor and in all subjects taught in our schools and colleges'. The authors represent a variety of disciplines: Germanics, History, English, Classics, Bacteriology, and the social sciences.

Americanists may have much to contribute to research in names, especially in respect to the many place names said to be derived from American Indian languages. It is to be hoped that they will take advantage of this opportunity to contribute to onomatological research.

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A NOTE ON SOME ARAWAK-CARIB LEXICAL RESEMBLANCES

According to Mason, "If Arawak is ever linked in a phyllum with other recognized families . . . , it will probably be with Carib. A suggested tie-up with Tupí is less likely."[1] I have not seen whatever evidence may have been presented in support of these suggestions; and both the Arawak and the Carib data available to me are very limited. Such as they are, however, they reveal more lexical similarities of form and meaning than can all be put down to coincidence. Many are no doubt due to linguistic borrowing by one from the other, or by both from some third source; for speakers of Arawak and Carib languages have long been neighbours throughout much of the territory where they are or were to be found, and often have or had very similar cultures. But others belong to a semantic layer in which loanwords are comparatively rare; and it seems possible that these may point to a genetic relationship on a distant level, such as has been shown recently for Mosan by Swadesh.[2] At all events, it seems worth while publishing this material, scrappy as it is, in the hope that it may stimulate further research in this direction.

In what follows, Arawak forms precede the Carib; the former being taken from Lokono, the latter from Kalina, except as otherwise indicated. The following abbreviations will be used where convenient: Ach. (Achagua), Ad. (Adzeneni), Go. (Goajiro), ICWS (Island Carib women's speech), Lok. (Lokono), Mand. (Mandawaca), for Arawaken languages; and Apar. (Aparai), ICMS (Island Carib men's speech), Kal. (Kalina), Oa. (Oayana), Trmt. (Triometesem), for Cariban languages; IC (Island Carib) will be used to indicate a form of the seventeenth century Dominican dialect common to the speech of both sexes. Island Carib forms are given in phonemic transcription, those from other languages in the spelling found in the data.[3]

Numerous names of plants, animals, stars, etc. show great resemblance in languages of both families; but as these are generally suspect of being loanwords, it will suffice to cite: *Cayenne pepper* (*Capsicum spp*): ati, asi; *crab sp.*: kua, kusa; (*river*) *crayfish*: isoro, isulu; *Morning or Evening Star*: uarukoma, alukuma, (cf. also *star*: IC ualukuma, Trmt. morotoma-no, and monotoman); *lightning*: bele-beliru, Oa. melemele wapot (wapot *fire*); *rough or broken water*: siba-sibaru, sipa-sipalu.

Resemblances in the more fundamental part of the vocabulary are much fewer, but are perhaps more numerous than one might

[1] J. Alden Mason, The Languages of South American Indians; BAEB 143, vol. 6, pp. 157–317; p. 209.

[2] Morris Swadesh, Mosan: A Problem of Remote Common Origin; IJAL 19:26–44, and later issues.

[3] Island Carib forms are taken from Raymond Breton, Dictionaire Caraibe-François; édition facsimile Jules Platzmann, Leipzig, 1892; Kalina forms are partly from a Galibi word-list in my possession, and from one or two other sources, but mainly together with all other Cariban forms, from de Goeje, Etudes Linguistiques Caribes; Amsterdam, 1946; Goajiro forms are taken from Nils M. Holmer, Goajiro (Arawak), IJAL 15:45–56, 110–120, 145–157, and 232–235; Lokono forms are mainly those communicated personally by Mrs. Nancy Hickerson; but also in part, together with all other Arawakan forms, from de Goeje, Nouvel Examen des Langues des Antilles; in JSAP, vol. XXXI, pp. 1–120.

expect from pure chance or from borrowing in this semantic area. They include *all*: -makua, -maka; *because of*: -doma, -tome ~ -toma; (cf. IC -ruma); *black*: karime-, karai-; *blow*: a-fu-di, Oa. pfu ~ puu, Kal. i-pu-ma, (cf. IC pu, a-pu-ra); *bone*: abo-na, epo; *earth* uaia, Motilon owa·ya; *flower*: koro, Apar. kuru, Oa. ekur; *go away*: -aiba, Oa. aimö-, Kal. -ama, (cf. ICWS -aiba, ICMS -aima); *here*: ia-ha, ie-re, ICMS ie-te; *know*: aita, ICMS eta, (cf. Kal. eta *hear*); *salt* pamo, motilon pa·mo; *sea*: bara, palana, (cf. also: Taino baua, ICWS baláua, ICMS balána, Tupí pará); *small*: sioko, asiko, Oa. psik, (and compare Go. -'čo, IC so [šë], both meaning *child* but employed as diminutives, with the Kalina diminutive, -si); *with*: -ma, -malo, Oa. -male. Other possible cognates which appear to be worth mentioning are: Lok. iya, IC iáua, Go. -yakwa, all meaning *shadow, image, picture*, and Oa akuali *soul, image, shadow, echo*, Kal. yakuwa *guardian spirit*; Lok. hebe *old, finished*, and ICMS -kebu *old*, Kal. -kepu *finished*, (cf. also IC kumu- *finished, consumed*); Lok. bili, and Trmt. ibibi-me, IC ebibie, all meaning *thin* (*not thick*); Lok. siba *stone*, and Kal. simari (*stone-chip*) *grater*; Lok. ereda, ICWS euéreka, and Kal. wenata, ICMS atuéneka, all meaning *to vomit*; Lok. erebu *near*, and Kal. elobo, or elopo *here*.

Other presumably Arawak words meaning *flower*, (besides that given above), are: ibi (Ach.), iui (Mand., with which compare Lok. iui *berry or fruit*), eliui (Ad.), and—because of its close resemblance to the latter—íleue (IC). If, as seems likely, Mand. iui *flower* and Lok. iui *fruit* were once the same word, it is reasonable to suppose that in Ad. eliui *flower* (and its IC correspondence, íleue *flower*) we have a complex word containing this same form. And when we look for a possible etymology of its first constituent, we find Taino -el *son* ('Giaiael which means son of Giaia'), -ili *grandson*,[4] Lok. ilon- *child*, ilikin- *grandchild*, and IC íla- *contents* ('ce qui est contenu en quelque autre chose'). Apart from the probability that all these Arawak forms may be related to one another, either 'child-fruit' or 'contents-fruit' is semantically plausible; and in the case of IC compounding, $-V_1 + \tilde{V}_2- > -V_2-$ is normal, so that íla + *éue would yield a compound homophonous with the attested form, íleue *flower*.[5] Also Carib languages have other words meaning *flower*, such as Trmt. eberuru, east-Venezuelan Kal. epëelële; and we may probably assume that these contain, analogously to Arawak, the Carib word for *berry or fruit*, ICMS ebe, Kal. epe. Now Carib languages appear never to have more than one labial stop, /p/ or /b/; and this frequently alternates, as between sister languages (and occasionally within the same language), with /m/ or /w/ (/u/, where the semivowel is not phonemic) or both. So, for example, Kal, wewe corresponds to Trmt. bewe, both meaning *tree or wood*; while Kal. wato corresponds to Trmt. mato, both meaning *fire*;[6] and Trmt. boroto-me and morotome are both given for *pregnant*. De Goeje relates ICWS 'im' (/ɨ/, in the modern dialect) *berry or fruit* to Lok. iui, which has the same meaning; but it might just as plausibly be related to Kal, eme ~ ime *child*, which, together with Kal. epe *berry or fruit*, may well have come from an older form meaning *fruit, child, offspring*.

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[4] Ramon Pane, as cited by Paul Radin, Indians of South America; New York, 1946; pp. 15 and 17.

[5] The form (h)éue *snake* (which is attested) being presumably a homonym of unattested *éue *berry, fruit*.

[6] Correspondences of this Cariban word for *fire*, spelt as found in the sources, include the following: IC ouáttou; Kal. dialects wato, vato, basto; Trmt. and Wama mato; Oa. wapot; Cumanogoto huapoto.

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